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THE COLONIAL FARMER,

DEVOTED TO THE AGRICULTURAL INTERESTS OF NOVA-SCOTIA, NEW-BRUNSWICK,
AND PRINCE EDWARD'S ISLAND.

VOL. I.

HALIFAX, N. S. NOVEMBER, 1841.

NO. 5.



THE COLONIAL FARMER.

HALIFAX, N. S., NOVEMBER, 1841.

POTATOES, MANURES, HAY.

To raise Potatoes of the best quality, old manure only should be used; that which was made in cow-pens and pig-pens the preceding summer will be fit for this purpose. With the exception of dry burnt woodland, an old pasture is the best soil if dry, and sandy or gravelly,—a clayey soil may produce more, but not of the first quality. Two thirds of the manure may be spread upon the ground, which should then be ploughed deep; and the remaining third part of the manure being carried on, and spread upon the surface, it should be well harrowed lengthwise with a light harrow. Two lines should be provided, made of salmon twine, long enough to reach across the the field, or as large a portion of it as may be convenient; the ends of the lines being attached to small stakes thirty inches long, or of the same measure that it is designed to leave between the rows. A man at each end of the lines then stretches them, driving the stakes at the proper distance, and each going forward the length of his line makes holes beside it, about two feet apart, and two inches deep, (a single stroke of a hoe only, is needed to make a hole.) They are followed by boys who drop a piece of Potatoe in each hole, cover it with their feet and then tread upon it. If it has been well harrowed an acre of potatoes can be planted in a short time in this way; a narrow harrow cultivator may be passed between the rows at first, and at hilling time a light plow may be used, but, even should the land be even, it will be necessary also to use the hoe, (the best is the German forked hoe) for it is necessary to good quality that the ground should be as light and mellow as possible, that the air may readily reach the roots; and for this reason they are planted shallow, and will in consequence, require to be well hilled up to prevent the potatoes from protruding their noses through the ground.

In some seasons Potatoes are blighted, and die before they have gained their full growth, proving necessarily of inferior quality. To prevent a disappointment of this kind, the seed should be added in hay chaff near a stove as early as the middle of March, and occasionally sprinkled with water. These Potatoes will have shed out sprouts an inch or more in length by the time the buds of the trees begin to swell, when they should be planted whole, without cutting or breaking the sprouts, and will in most seasons be nearly ripe by the first of September. It should always be remembered, that situations most exposed to the southerly, or sea winds, are most affected by the blight. Dry and very good Potatoes are raised by using stable manure made the preceding Winter,

but they always have a stronger and more acrid taste than those which are raised with old manure, and with the soil so often stirred, that it is always very loose and light, giving a free passage to the air. There are some plants, like the cucumber and onion, which may be grown of the best quality with fresh manure, but it should not be used for grass or any kind of grain, except Indian Corn, and as we raise but little of this, it is necessary to use the fresh manure for Potatoes, which will bear it much better than grain or grass, for we cannot afford to keep it a year in a compost heap because it will lose probably one third of its value by the evaporation of the volatile portion. Yet as our climate is remarkable for the good quality of the Potatoes it produces, it would often be desirable to use a little extra care and labour in raising those designed for the table.

It is hardly possible to raise Potatoes of the very best quality with kelp or rockweed, but if they are planted as above directed, with the exception of covering all the manure with the plough and spreading none upon the surface after ploughing, they will pass for good. Care should be taken that this kind of manure be heated and beginning to putrefy before it is used.

In a dry season and on dry gravelly land Potatoes will have the crop considerably increased if a small quantity of half decayed rockweed or kelp is put in the bottom of each drill, under the stable manure, as it enables them to resist the effects of drought in a remarkable degree.

The peculiar food which will make any particular vegetable of the best quality is not well known—"there are more things in Heaven and earth than are dreamt of by our Philosophers." There is still an immense tract of "Terra Incognita" awaiting the researches of the Agricultural Chemist. The worn out pasture which has not been ploughed for twenty years will produce better Potatoes than any land which has been well cultivated. It is hardly possible to raise a patch of black winter radishes of the best quality—of this, the Flemish, who make almost daily use of this vegetable, are well aware, they therefore sow two or three seeds wherever there is a small gap in their field or garden—the radish which grows singly, remote from others, being generally good.

A plentiful dressing of fresh animal manure of any kind, is more or less injurious to the quality of most vegetables, but the remainder of the manure which has lost most of its strength, will generally produce crops of good quality.

There is great difference in the quality of hay, caused by the soil and manure. I have seen a growth of Timothy raised on a drained swamp extravagantly manured with night soil. I judged the yield to be fully five tons to the acre. It was cut when in blossom, and made in good weather; upon chewing the hay it appeared to be a tasteless wood without any sweet or mucilaginous juice. Cows fed with it for a few days lost their milk, and fell off so fast, that it appeared probable they would have died had they had no other food for five weeks. A Horse who was fed with it for some time was found to require such an extraordinary quantity of corn, that it was certain he received very little nourishment from his hay. We see that cattle do not willingly eat the rank grass that is produced by fresh manure, but will leave it untouched if they can procure a scanty allowance of short grass. Their instinct teaches

them to avoid food that would injure their health. Gibson relates that a troop under his care, had for several years had their horses grazed upon the aftergrass of a farm near London, from which they had always returned in good condition—though the grass was but short, the farm having been much neglected by the tenant. In a following season another tenant hired the farm, and spread a great quantity of manure upon the grass land, and there was of course a very rank growth of aftergrass. The horses were sent to the farm at the usual season, but soon became unhealthy, and in the course of a few weeks forty were sick, he went to examine the pasture, and upon observing its dark green color, was immediately convinced that the cause of the sickness was to be traced to the unwholesome quality of this over-manured grass.—He accordingly ordered the horses back to their stables, and put them upon dry food, which soon restored their health.

Our best hay is that which grows upon dry land which has been often manured. It is generally a mixture of Couch Grass, Timothy, Red and White Clovers, Foxtail, and Sweetscented Grass. When the land has been topdressed with compost formed the preceding summer, the hay will always be good if it does not give more than two and a half tons to the acre, but if it much exceed this quantity the quality will be inferior. But should this land receive no manure for three or four years or until the crop is reduced to one ton to the acre, the hay will be of superior quality, provided the grasses are not changed, being at least one fifth more valuable than that which yielded two and a half tons, five times as valuable as the Timothy above described, which gave five tons to the acre. (On moist land, if there is but one ton to the acre, a considerable part of it will be the small browntop, *Agrostis Vulgaris*; always a grass of inferior quality.) In a dry season the hay is of the best quality generally; holding more mucilaginous and saccharine matter, and less wood in the stem and less siliceous matter in the epidormis or outer bark, than it does in a wet season. The first crop of timothy raised on new hardwood land is of inferior quality to the same grass grown on old cultivated ground. It should, if designed for feeding cows, be cut as soon as all the heads are out, and before it has acquired its full height. For Horses it may be allowed to stand till it begins to blossom. On old land Timothy for cows may be permitted to stand till it is in flower, and for Horses till out of blossom.

A very rank crop of Clover will be found of most value, both for Cows and Horses, if cut just before the flowers open.

Among the grasses, as well as other vegetables there are some gross feeders which can draw wholesome nutriment from soils too rich for others. The native variety of Couch grass will give a great crop of excellent hay upon a soil too rich for Timothy.

A large quantity of coarse manure may be applied to Indian Corn, Beets, Carrots, and Swedish Turnips, they are all gross feeders, and I have seen potatoes of a good (though not the best) quality which yielded at the rate of five hundred bushels to the acre, but care had been used to make the ground very mellow to a considerable depth, and their ripening was favored by a severe drought, previous to which the stems had grown to such an enormous length that the crop was expected to fail:

As the value of every kind of grass is so greatly affected by differences of soil, manure, and seasons, it is certain that very little confidence can be placed in Tables which pretend to give the proportions of Nutriment contained in different species, notwithstanding the high character of those by whom they were formed. The Chemist is here out of his element, he has not yet learned the *modus operandi* in that animated Laboratory, the stomach of an

animal. The Moose will live upon young maple wood—the Beaver fattens upon Bark which contain large proportions of the tanning principle—the Cariboo thrives upon the juiceless lichens, the white moss, and the paper—like mosses attached to the Rocks. Swire will live upon dock and comfrey, but the Cow will starve before she will taste these plants, yet she eagerly devours the woody night-shade, which is poisonous to man.

Experiments would be very useful which should really ascertain the relative value of our different grasses, and the proper time of cutting them. For this purpose they should be sowed separately, in such quantities that parts of each might be cut at different periods of their growth, and then fed to cattle of each kind for a considerable time. The quantity of milk given by a Cow would shew which kind of hay suited her the best, but more time would be required for Horses and Sheep. T. S.

MEANS FOR THE IMPROVEMENT OF AGRICULTURE.

We invite the attention of the readers of the Colonial Farmer to the following extracts from the letter of an eminent individual and practical farmer, published in the *Cultivator*. The opinions of such men on the subject of Agriculture, and the best means of advancing it, deserve and will receive consideration:

"As to Legislative aid, whenever farmers shall be convinced that it is for their advancement and interest, whenever they shall wake up to the importance of their pursuit, and its intimate connection with the prosperity of their Country, they will have it; their petitions will command immediate attention, and what we are now craving as a boon, they will require as their right. But with all due deference to others, I would suggest that on this point we are premature; we are in advance of the times, and are trying to force on the farmer what he has not yet been taught to appreciate. With these views, I would rather turn the attention of the Society to the more extended circulation of Agricultural Periodicals, as the great preparative step to improvement; for myself, I feel it a great individual gain wherever I can induce a neighbour to subscribe to a periodical, he becomes to me a more intelligent and valuable associate, our minds have been occupied with the same subjects, and are prepared to converse of them when we meet, and exchange our views, opinions and experience, upon whatever has been presented to us. I also believe that occasional lectures, adapted particularly to the agricultural community, and having in view certain prejudices which might thus be overcome, would be of infinite service, and would go far to convince them of the great advantage to be derived from reading. The moment the great body of Agriculturists consent to read they will become the most intelligent portion of society, and I need scarce say, the most influential. Let the farmer read, and he will soon understand what will most conduce to his interests, and will learn how best to promote and secure them. I think then there will be no difficulty in supporting Agricultural schools in various districts of the State, and I am strongly inclined to believe that they would be more useful than one large institution as was formerly contemplated.

"It may be said that these are subjects of individual action. I am aware of it, and most sincerely hope that every friend of agricultural improvement will so consider them, and if they view them as I do, that they may be induced to act upon them. There are those in every community, who by a small sacrifice of time and attention, and with a very trifling expenditure in aid of the objects to be desired, may in a few years revolutionize the present miserable state of agriculture around them, and thus become identified with the interests and most enduring prosperity of their neighbourhood."

This appears to us to be sound doctrine. Make men intelligent, make them to understand the subjects that are of the most consequence to them, place in their hands those works that relate to their business and their interests and they will soon act understandingly and decisively. We believe and we doubt not all well informed men will concur with us, that the most effectual means for the advancement of agriculture in this country, and placing the

farmer in the position which the genius and institutions of the land allot to him, is the diffusion of agricultural knowledge—teaching the farmer to read, and thus dislodge his mind of the prejudice which still lingers with so many, of the inutility of science, knowledge, and general learning, in connection with agriculture.

It may easily be shown that there is no single occupation or business in life, where extensive knowledge is more necessary than it is to a full understanding and proper practice of agriculture.—There is none so intimately blended with all the important branches of the natural sciences as this; none to which geology, chemistry, botany, and entomology, are such important contributors and invaluable auxiliaries. The earth, the air, are full of instruction to the farmer, the pebble, leaf, insect; the composition and decomposition of matter and its causes, are all before him, all constantly going on around him, all inviting attention as part of the processes he must produce if he is a successful cultivator of the soil. He must read and if he fails the value of knowledge himself, he will be proportionably anxious that those around him, his neighbouring farmers, his friends, should read also. A community of knowledge constitutes one of the strongest ties that can bind society together; whatever may be the topic, it is a bond of feeling and interest not easily broken or destroyed. An intelligent practical man may change the whole course of agriculture in a neighbourhood and give an impulse to its prosperity, which endure long after the cause is forgotten. We have seen a man go into a neighbourhood of farmers, respectable men, but who did not read, and felt the old fashioned contempt and aversion for those who did. This man was a reader of agricultural papers, and when an improvement was pointed out that his good judgment showed was adapted to his means, his farm, or his circumstances, he adopted it at once. He improved his farm by draining his lands, and nearly doubling the ordinary crops, by skilful cropping and rotation. He improved his stock by purchasing at great cost, superior animals to breed from. His neighbours at first called him a *book farmer*, and sneered at his management. They soon found the laugh was on the wrong side, and began to inquire the causes. If he could get a neighbour to read, his periodicals were always at their service; and if he met a brother farmer, some proposition was made or some inquiry started which he was sure would lead to useful results. Soon they found agricultural papers necessary, and became subscribers themselves; an agricultural paper has become as indispensable as a political one, and its arrival is always looked for with interest and pleasure. The prominent farmers of that neighbourhood are now *readers*; several different publications are received; and when they meet, the comparative merits of the different modes of husbandry are freely and intelligently discussed. We would wish to see such examples as this more frequently imitated.—When they become common, it will be a proud day for American agriculture, in such instances, we trace the true secret of improvement, for although the looker on may at first sneer at the reader, he is sure eventually to imitate, first the improvements he makes, and lastly his course of reading. We ask it then as a favor, of every friend to agricultural improvement to bring a knowledge of farming periodicals to the notice of his neighbours—let them be induced to become subscribers—to read, to reflect on the means of improving their cultivation, and a point will be gained, which will afford a rational hope of rapidly increasing and permanent prosperity.

DRAINING.

Of all operations in agriculture, none is more necessary than draining, and to practice this operation successfully, it is necessary for the farmer to have a proper knowledge of the various strata near the surface of the land which requires draining. Oozing Springs, bogs, Swamps, or morasses, on level ground near elevated lands, are the most difficult to drain. When the water filters or slides down the porous sides of high grounds, the best method of draining is that of interrupting the descent of the water or spring, and thereby totally remove the cause of wetness. This may be done where the depth of the superficial strata, and consequently of the spring, is not great, by making horizontal drains across the declivities of the hills, above where the low grounds of the valleys begin to form, and connecting these with others made for the purpose of conveying the water thus collected into the brooks that may be near.

In Ireland, I have often seen on thin layers of clay, which had underneath them sand, stone, or other porous or fissured strata, to a considerable depth, that by perforating the thin layers of clay in

different places, the water could be let down into the open porous materials that lay below them, and the surface land be thus completely drained.

The general origin of the wetness of land which it is the object of under-draining to remove, will be found to be the existence of water in sub-strata of sand, gravel, open rock or other porous substances, which either lead to the surface, or having no natural outlet, become filled or saturated, while the pressure of more water coming from a higher source, forces that which is in the lower part of the stratum upwards through the superior strata to the surface; thus occasioning either bursts and springs, or a general oozing through the soil. Any farmer who does not perfectly understand the general oozing of water through the soil, from water or moisture, in the immediate vicinity, naturally or artificially kept on a higher or equal level, may be convinced of the fact by the clearest demonstration if he has an opportunity of viewing a canal that may be so situated, and whose banks have not been secured by puddling, or the leakage through the embankment intercepted by proper and sufficient drains.

The object of under-draining therefore, is not to catch the surface water, but that which flows through the inferior strata; and, for this purpose it is necessary to make a sufficient channel, either at the lower part of it as may conveniently carry off the water, so as the pressure referred may be relieved, or the water intercepted before it reaches the surface. It must always be kept in mind then, that under-draining or surface-draining are operations essentially distinct, and every care must be used in practice not to blend them in the execution. If surface water be allowed to get into a covered drain, the sand and mud which it will carry into these subterraneous channels will soon choke them up, and occasion bursts, creating, as may be conceived, new swamps; while the expense of taking up and relaying the under drains will be very great, and the execution imperfect, the sides being found never to stand a second time so well as when first formed.

In the drainage of wet or boggy grounds, arising from springs of water beneath them, a great variety of circumstances are necessary to be kept in view. Lands of this description, or such as are of a marshy and boggy nature, from the detention of water beneath a spongy surface materials of which they are composed, and its being absorbed and forced up into them, are constantly kept in such state of wetness, as are highly improper for the purpose of producing advantageous crops of any kind. These tracts, if properly reclaimed, would be of considerable value in the climate of Canada, and should, therefore, be an object of great interest and importance to the industrious farmer who might have such lands. Wet grounds of these kinds, may be arranged under three distinct heads first, such as may be readily known by the springs rising out of the adjacent more elevated ground, in an exact or regular line along the higher side of the wet surface; second those in which the numerous springs that show themselves are not kept to any exact or regular line of direction along the higher or more elevated parts of the land, but break forth promiscuously throughout the whole surface, and particularly towards the inferior parts, constituting shaking quags in every direction, that have an elastic feel under the feet, on which the lightest animals can scarcely tread without danger, and which for the most part, show themselves by the luxuriance and verdure of the grass about them; that sort of wet land, from the oozing of springs, which is neither of such great extent, nor in the nature of the soil so peaty as the other two, and to which the term bog cannot be strictly applied, but which, in respect to the modes of draining, is the same.

When on the declivity or slanting surface of the elevated ground from which the springs break forth, they are observed to burst out at different levels, according to the difference of the wetness of the season, and where those that are lowest down continue to run, while the higher ones are dry, it is in general, a certain indication that the whole are connected, and proceed from the same source, and consequently that the line of drain should be made along the level of the lowermost one, which if properly executed may keep all the rest dry. But if the drains were made along the highest of the outlets, or place where the water breaks forth, without being sufficiently deep to reach the level of those below, the overflowing of the springs would merely be carried away, and the wetness proceeding from that cause be removed, while the main spring still continuing to run, would render the land below the level of the bottom of the drain, still prejudicially wet, from its discharging itself lower down below the surface of the ground.—It is absurd to expect that by cutting drains between the wet and

dry grounds where the the highest springs show themselves, will take away the whole of the water from the land below unless they are cut of sufficient depth to command the level of the land to the bottom of the declivity.

In swamps that are extensive and wet, other drains or cuts than such as come off the springs must be made; as, notwithstanding the in the springs which chiefly cause the wetness, may be intercepted, there may be lower veins of sand, gravel, or other porous materials, from which the water must likewise be drawn off. In cases of this nature, when the land is to be divided into enclosures, the ditches may be formed into such directions as to pass through and carry off collections of water of this kind as well as those that may be retained in the hollows and depressions on the surface of the land. There are in many places very extensive tracts of ground that are rendered very wet, and become full of flags and other coarse plants, from causes of such a nature as cannot be obviated by the making either open or covered drains, however numerous they may be.

Land in this situation are frequently termed swamps, and mostly lie on the sides of such rivers and brooks, as, from the frequency of their changing and altering their courses between their opposite banks, leave depositions of sand, gravel, and other porous materials, by which land is formed, that readily admit the water to filtrate and pass through it to the level of the last formed channels, and which preserves it constantly in such a state of moisture and wetness, as to render it productive of nothing but flags and other plants; and if a pit or ditch be made in lands under these circumstances, it quickly fills with water to the same level as that in the water course. This effect is, however, more liable to be produced, as well as more complete, where the current of the water is slow, and its surface nearly equal with that of the land, than where its descent is rapid. Under such circumstances, while the river or brook remains at the ordinary height, no advantage can be gained, whatever number of drains be formed, or in whatever direction they may be made. The chief or only means of removing the wetness of land proceeding from this cause is, that of enlarging and sinking the bed of the stream, where it can be effected at a reasonable expense; where there is only one stream and it is very winding or serpentine in its course, much may, however, be effected by cutting through the different points of land, and rendering the course more straight, and thereby less liable to obstruct the passage of the water.

A case of straightening the course of a river is given in the Code of Agriculture. The waters which in their crooked course were almost stagnated, now run at the ordinary rate of the declivity given them. They never overflow their banks. Cattle can now pasture upon those grounds which formerly have been swamped. The surface of the water being now in general four and sometimes six feet below the adjacent fields, this cut serves as a general drain to the whole valley, so that three hundred acres of meadow may be converted into arable land; sixty acres of moss may be improved into meadow, and five hundred acres of arable land are rendered of double their former value.—*Evans.*

PRINCIPLES OF ROTATION OF CROPS.

Growing different crops in succession is a practice which cultivators will find to be very advantageous. Sir H. Davy says, "It is a great advantage in the convertible system of cultivations, that the whole of the manure is employed, and that those parts which are not fitted for one crop, remain as nourishment for another.— Thus, if the turnip is the first in the order of succession, the crop manured with recent dung, immediately finds sufficient soluble matter for its nourishment; and the heat produced in fermentation, assists the germination of the seed and growth of the plant. If, after turnips, barley with grass seeds are sown, then the land having been little exhausted by the turnip crop, affords the soluble part of the decomposing manure to the grain. The grasses and clover which remain, derive only a small part of their organized matter from the soil, and probably consume the gypsum in the manure which would be useless to other crops. When the soil is exhausted, recent manure is again applied.

Peas and beans, in all instances, seem well adapted to prepare ground for wheat; and in some rich lands they are raised in alternate crops by years together. Peas and beans, contain a small quantity of matter analogous to albumen; but it seems that the azote, which forms a constituent part of this matter, is derived from the atmosphere. The dry bean leaf when burnt, yields a smell ap-

proaching to that of decomposed animal matter, and in its decay in the soil, may furnish principles capable of becoming part of the gluten in wheat. Though the general composition of plants is very analogous, yet the specific difference in the products of many of them prove that they must derive different materials from the soil; and though the vegetables having the smallest system of fibres will proportionably most exhaust the soil of common nutritive matter, yet the particular vegetables, when their produce is carried off, will require peculiar principles to be applied to the land in which they grow. Strawberries and potatoes at first produce luxuriantly in virgin mould, recently turned up from pasture; but in a few years they degenerate, and require a fresh soil. Lands in a course of a few years, often cease to afford good cultivated grasses; they become tired of them; and one of the probable reasons for this is, the exhaustion of the gypsum contained in the soil." Experience has proved that land whatever may be its quality, should not be sown with clover at shorter intervals than five years.

The power of vegetables to exhaust the soil is remarkably exemplified in certain funguses. Mushrooms are said never to rise in two successive seasons on one spot.

Of late it seems to have been satisfactorily established that the roots of all plants, besides imbibing nourishment, perform also an excretory office, and that in the soil in which plants grow, there are deposited by the roots, certain matters of an excrementitious nature, injurious to the plants from which they have been separated, and which, therefore, cannot be absorbed again, till they have undergone decomposition. Such excreted matters have been added as the reason why a soil becomes so much deteriorated by any one species of plant having long grown in it, that it will not support other individuals of the same species; whence the increased necessity of a rotation of crops.

The principle of rotation of crops is thus laid down by Yvart and Ch. Pietet (Cours complet d'Agriculture, articles Assoultimens, and Succession de Coulture; au d'Traite des Assoultimens, Paris, 8 vo.)

The first principle or fundamental point is, that every plant exhausts the soil.

The second, that all plants do not exhaust the soil equally.

The third, that plants of different kinds do not exhaust the soil in the same manner,

The fourth, that all plants do not restore to the soil the same quantity, nor the same quality of manure.

The fifth, that all plants are not equally favorable to the growth of weeds.

The following consequences are drawn from these fundamental principles:

First. However well a soil may be prepared, it cannot long nourish crops of the same kind in succession, without becoming exhausted.

Second. Every crop impoverishes the soil more less, as more or less is restored to the soil by the plant cultivated.

Third. Perpendicular rooted plants and such as root horizontally ought to succeed each other.

Fourth. Plants of the same kind should not return too frequently in a succession.

Fifth. Two plants favorable to the growth of weeds, ought not to succeed each other.

Sixth such plants as eminently exhaust the soil, as the grains and oil plants, should only be sown when the land is in good heart.

Seventh. In proportion as the soil is found to exhaust itself by successive crops, plants which are least exhausting ought to be cultivated.

The influence of rotation in destroying insects, Olivier, member of the Institute of France, has described all the insects *tepuia muscaea*, which live upon the collar or crown of the roots of the cereal grasses, and he has shown that they multiply themselves without end, when the same soil presents the same crop for several years in succession, or even crops of analogous species. But when a crop intervenes on which these insects cannot live, as beans or turnips after wheat or oats, then the whole race of these insects perish from the field, for want of proper nourishment for their larva.

GOOD MEDICINE FOR HOGS.—The American Farmer furnishes the following:—When your hogs get sick, you know not of what, give them ears of corn, first dipped in tar, and then rolled in sulphur. 'Tis ten to one that it arrests the disease, and restores the pig to health.

[Selected.]

FARMER'S SONG.

[Extract from a manuscript, still in the hands of its author and probably, with him, destined to the ocean of oblivion. If you think the scrap worthy of the little space it would occupy, it may meet a better fate.
A. W.]

In a sweet healthy air with a farm of his own
Secluded from tumult and strife,
The farmer more blest than the king on his throne,
Enjoys all the comforts of life.
When the sweet smiling Spring sheds it perfumes around,
And zephyr enchants every tree,
With his glittering plowshare he furrows his ground,
With mind independent and free.

When Summer, to fruit the sweet blossoms transforms
And his harvest fields wave with the breeze;
Sweet anticipation unfolds all her charms,
And points to contentment and ease.
When bountiful autumn her treasures bestows,
And her fruits are all gathered and stored;
His heart to the Giver, with gratitude glows,
And plenty presides at his board.

When Winter howls dismally over the earth,
And want tells her tale at his door;
Serenely he sits by his clean blazing hearth,
And dispenses relief to the poor.
Then let idle ambition her baubles pursue,
While wisdom looks down with disdain,
The home of the farmer has charms ever new
Where health, peace and competence reign.

PINE SAWDUST—INQUIRY

Mr. WHITE, the owner of an extensive steam saw mill near Jackson, (Miss.) inquires "whether pine sawdust has ever been applied as a manure; with what benefit; and to what description of soil it would be most serviceable?" He says:

"We have large quantities both of sawdust and ashes; would a mixture be beneficial? There are some low grounds on our place of heavy clay, as yet unopened. Could it by ditching and applying the sawdust alone, or combined with ashes, be rendered serviceable in a year. The ashes we have will prove an invaluable manure to the most of our lands as we get it opened, which is generally a light sandy loam. Hence a desire for preserving them for that purpose. The saw dust will shortly become a nuisance, unless it be made useful as a manure. Under any circumstances, it is my intention to make some partial trials with it, but if it has been successfully employed, I would like to know it, in order to avail myself of other peoples experience. The point I wish to get at more than any other, is, would the application of this description of dust, before rotting be injurious to the land?"

Sawdust applied to soils would first act mechanically, by rendering them less tenacious and more friable; and when rotted, would be the same as any vegetable manure. There can be little doubt that on heavy clay lands, especially when drained, a dressing of sawdust would be useful, both in lightening the soil, and eventually as manure. At the north, sawdust of all kinds is highly prized, but its great use is to put in cattle yards or pig pens, to absorb the liquid manures, and have the acid, all woods contain more or less, corrected by the alkaline salts existing in such places. Mixed with animal manures in this way, it forms one of the best applications that can be made to land. A mixture with ashes, as alluded to by Mr. W., would correct the acidity, but it is probable the beneficial results of the ashes would be more apparent on the light than on the heavy soils. Pine sawdust, as such, we have never known used extensively, but should have no fears of applying it to any land where it could be of any use in rendering it more friable at first, or valuable as decayed vegetable matter afterwards. We should advise Mr. White to use as much of his sawdust as possible in his cattle and hog yards, to be trampled upon and saturated with animal matter, and the rest mixed with ashes, put on such of his heavy lands as he can drain and open. The experiments, however, upon which Mr. W. is entering, will decide these questions more effectually than any theory.—*Cultivator.*

DISEASE OF VEGETABLES.

Diseases are corrupt affections of the vegetable body, arising from various causes, tending to injure the habitual health of the whole or part of the plant. The diseases which occur most frequently among vegetables in Canada, are the following: Blight, smut, mildew, and the ear-worm in wheat, thought to be occasioned by the wheat fly. Blight or blast, if taken in the most general acceptation, will include four distinct species: blight originating in cold and frosty winds, in a sort of sultry and pestilential vapour, from want of due nourishment, and the propagation of a sort of small and parasitical fungus.

Blight, originating in cold and frosty winds, is often occasioned by the cold winds of spring, which nip and destroy the tender shoots of the plant, by stopping the current of juices. The leaves which are now deprived of their due nourishment, wither and fall, and the juices now stopped in their passage, become the food of innumerable insects which soon after make their appearance.—Hence they are mistaken for the cause of the disease itself, while they are only generated in the stagnant juices as forming a proper nidus for their eggs. Their multiplication will no doubt contribute to the spread of the disorder, as they always breed fast where they find plenty of food.

Blight, originating in sultry and pestilential vapour, generally happens in summer, when the grain has nearly attained its full growth, and when there are no cold winds or frost to occasion it. Such was the blight that used to damage the vineyards of ancient Italy, and which is yet found to damage the hop plantations and wheat crops in England. The Romans observed that it generally happened after short but heavy showers occurring about noon, and followed by clear sun-shine, about the season of the ripening of the grapes, and the middle of the vineyard suffered the most.—This corresponds pretty nearly with the manner that hops are affected in England. Wheat is also affected with a similar sort of blight, about the same season of the year, which in some instances has been known totally to destroy the crop in England; but I have never seen it very destructive here. In the summer of 1809 a field of wheat in England, on rather a light and sandy soil, came up with every appearance of health, and also into ear, with a fair prospect of ripening well. About the beginning of July it was considered as exceeding anything expected from the soil. A week afterwards a portion of the crop on the east side of the field to the extent of several acres, was totally destroyed, being shrunk and shrivelled up to less than one half the size of what it had formerly been, and so withered and blasted as not to appear to belong to the same field. The rest of the field produced a fair crop.

Blight, for want of due nourishment, may happen to all plants wild or cultivated; but it is most commonly met with in cornfields, in very dry seasons, in those thin gravelly surfaces, which do not sufficiently retain the moisture. In such spots the plants are prematurely thrown into blossom, and the ear or seed-pod ripens before it is filled. In England, the farmers call this the white blight. I have seen this blight frequently in Canada but not to great extent. Blight, originating in fungi, attacks the leaves and stems of herbaceous plants, but more particularly our most useful grains, wheat barley, and oats. It always appears in the least ventilated parts of a field and has generally been preceded by cold, moist weather, which, happening in the month of July suddenly chills, and checks vegetation. It generally assumes the appearance of rusty looking powder, that soils the fingers when touched.—Sickly plants are the most subject to be affected, and it is thought that the fungus may exist in the manure or soil, and enter the plant by the pores of the root. It is known in England among farmers by the name of *red rust*, and chiefly affects the stalks and leaves. There is another species of fungus, known by the name of *red gum*, which attacks the ear only, and is extremely prejudicial. This last is generally accompanied with a maggot of a yellow colour, which preys upon the grain and increases the injury.

The only means of preventing or lessening the effect of any of the different varieties of blight mentioned, is proper culture.—Grisebthwaite conjectures that in many cases in which the blight and mildew attack corn crops, it may be for want of the peculiar food requisite for perfecting the grain; it being known that the fruit or seeds of many plants contain primitive principles not found in the rest of the plant. Thus, the grain of wheat contains gluten and phosphate of lime, and when they are wanting to the soil, that is, in the manured earths in which the plant grows, it will be unable to protect its fruit, which of consequence becomes more liable to disease.

Smut is a disease incidental to cultivated corn, by which the farina of the grain, together with its proper integuments and even part of the husk, are converted into a black soot like powder.—The disease does not affect the whole body of the crop, but the smutted ears are sometimes very numerous dispersed throughout it. Some have attributed it to the soil in which the grain is sown, and others have attributed it to the seed itself, alleging that smutted seed will produce a smutted crop; but in all this there seems to be some doubt. Willdenow regards it as originating in a small fungus, which multiplies and extends all it occupies the whole ear. It is said to be prevented by steeping the grain in a weak solution of arsenic, before sowing. But besides the disease called smut, there is also a disease analogous to it, or a different stage of the same disease, known to the farmer by the name of *bags* or *smut-balls*, in which the nucleus of the seed only is converted into black powder, whilst the ovary, as well as the husk remains sound. The ear is not much altered in its external appearance, and the diseased grain contained in it will even bear the operation of threshing, and consequently mingle with the bulk; but it is always readily detected, and fatal to the character of the sample. It is said to be prevented as in the case of smut.—*Evans*.

BEETS OR ROOTS FOR STOCK.

On this subject our farmers appear to be fairly confronted. I too, have been prejudiced in their favor, and gave them a fair trial using them as a collateral food, in addition to plenty of other feed, I valued them fed with corn fodder and timothy hay, to act as an aperient with dry fodder. But I have since substituted the augmenting for the depleting system, so far as hay is concerned; I now make nearly all clover hay, on the highly improved method adopted by Judge Buel, and the same mode has been still longer adopted by an old obscure tho' discerning and extensive German farmer in this country, west of Lancaster, whom I could wish sufficient education to record his experience in the cultivation of the soil. I can bear ample testimony to the superiority of clover hay thus made, preserving the flower, blade and stem sweet and fragrant without waste. It requires no opening medicine like timothy to keep the hide from adhering and growing to the ribs, to say nothing of its superior ameliorating properties to the soil. The idea of an acre of land which would make two tons of hay, producing from fifteen to twenty tons of beets, held out bewitching inducement to "go in" for beet culture, but finding that they afford a mere condiment to stock, and relying on the representation of chemists, that the common sugar beet contains 85 per cent of pure water and 5 of pithy or ligneous substance to 10 per cent only of nutriment, I have concluded that a very large quantity of beets afford a very small quantity of real nutriment, and that they have a fictitious value. Potatoes contain 20 to 25 per cent of nutritive matter, carrots and parsnips 9 per cent, and ruta baga 6 to 7 per cent of saccharine matter. So that potatoes will actually afford as much nutriment although they yield less quantity. And here I may be permitted to draw a parallel: the farmer who extirpates the necessaries of life from his grounds to make room for the operations of silk culture, certainly substituted the luxuries for the necessaries of existence; so with the present mania for root culture, (pre-supposing present expectations will be realized,) we find the effort actually made to force mother earth, to produce exuberant root crops, in addition to the usual crops of corn, in order that the farmer's stock, which usually subsisted on a portion of the corn crop, may now live on roots, to make the whole corn crop a surplus, and the quantity then, necessarily in market, produce such depression in the price that instead of being used as formerly, it will be abused in distilling that *nichterous* liquor, called blue ruin or whiskey! Now I verily believe that the farmer who will take the same liberal means to force a large corn crop, on an acre, will obtain as much and a "little" more solid nutriment, than can be obtained from beets on the same ground, and that too, with far less expense and trouble. The truth is evident, that if the agriculturists of Europe could raise indian corn (it will not mature in Europe,) with the same facility we do, we should hear nothing from the other side of the water, on the importance of their root culture.—*Cultivator*.

CONSTANT SUPPLY OF EGGS—J. G. Bergen, Esq. of Brooklyn, says—"We never miss obtaining eggs throughout every day of the year, and simply because we always give our fowls as much Indian corn as they will eat."—*Cultivator*.

FATTENING ANIMALS.

There are some rules which may be advantageously adopted in feeding animals, which however obvious they may be, are too often passed over or neglected. Some of these will be specified and

1st. *The preparation of Food.* This should be so prepared that its nutritive properties may be all made available to the use of the animal, and not only so but appropriated with the least possible expenditure of muscular energy. The ox that is obliged to wander over an acre to get the food he should find on two or three square rods—the horse that is two or three hours eating the coarse food he would swallow in fifteen minutes if the grain was ground or the hay cut as it should be—the sheep that spends hours in making its way into a turnip, when if it was sliced it would eat it in as many minutes—the pig that eats raw potatoes, or whole corn, when either cooked, could be eaten in one quarter of the time now used, may indeed fatten, but much less rapidly than if their food was given to them in a proper manner. All food should be given to a fattening animal in such a state, that as little time and labor as possible, on the part of the animal, shall be required in eating.

2nd. *The food should be in abundance.*—From the time the fattening process commences, until the animal is slaughtered, he should never be without food. Health and appetite are best promoted by change of food rather than by limiting the quantity. The animal that is stuffed and starved by turns, may have streaked meat, but it will be made too slowly for the pleasure or profit of the good farmer.

3rd. *The food should be given regularly.*—This is one of the most essential points in feeding animals. If given irregularly the animal indeed consumes his food, but he soon acquires a restless disposition, is disturbed at every appearance of his feeder and is never in that quiet state so necessary to the taking on of fat. It is surprising how readily any animal acquires habits of regularity in feeding, and how soon the influence of this is felt in the improvement of his condition. When at the regular hour, the pig has had his pudding, or the sheep its turnips, they compose themselves to rest, with the consciousness that their digestion is not to be unreasonably disturbed, or their quiet broken by unwanted irritation to eat.

4th. *The animal should not be needlessly intruded upon between the hours of feeding.*—All creatures fatten much faster in the dark than in the light, a fact only to be accounted for by their greater quiet. Some of those creatures that are the most irritable and impatient of restraint while feeding, such as turkeys and geese, are found to take on fat rapidly when confined in dark rooms, and only fed at stated hours by hand. There is no surer proof that a pig is doing well, than to see him eat his meal quickly and then retire to his bed, to sleep or cogitate until the hour of feeding returns. Animals while fattening should never be alarmed, never rapidly driven, never be fed at unseasonable hours, and above all things, never be allowed to want for food.—*Cultivator*.

BREEDING, REARING, AND MANAGEMENT OF FARM HORSES.

The horse family are by far the most important among the brute creation, as servants to man. In a wild state, the horse is, in general, of an inelegant form, and extremely untractable; but, when domesticated, he becomes docile, yet bold and intrepid, and is highly attached to man. In no country has his various qualities, both for the turf, the field, and the road, been brought to such perfection as in England; and, with the exception of the pure Arabian, there can nowhere be found a breed to compare with the English race horse. The subject of thorough bred horses is, however, beyond the scope of this treatise, which, being intended for the use of farmers, it is proper to confine to a description of draught horses best suited to agricultural purposes; and a variety of saddle horses that might be necessary for the occasional use of farmers, for the saddle, and for light work; these may be ranked under the denomination of Canadian horse, Suffolk punches, and the improved English hackney, or a variety of horses possessing their qualities. The two former have been already described; it only remains to describe the latter.

The improved hackney, is derived from a judicious mixture of the blood breed, and sometimes the hunter, with mares of substance, correct form, and good action. In the hackney, as safety is as re-

quisite as speed, it is necessary to look particularly to the fore parts; see that they are high and well placed; that the head is not heavy, nor the neck disproportionately long or short; that the legs stand straight, (that is, that a perpendicular line drawn from the joint of the shoulder should meet the toe,) and that the elbows turn out; although a perfect conformation in the hinder parts is necessary to the hackney, it is in some measure subordinate to the same perfection in the fore parts; whereas in the racer and hunter, but particularly in the former, the form of the hinder is even of more consequence than that of the fore parts. This description of horse would be very suitable in some situations for many purposes, though not generally necessary for farmers.

In the breeding of horses, the entire attention should not as is so commonly practiced, be confined to stallions. So far as experience has hitherto shown, it has in most instances been found that nearly as much depends upon the mare, as upon the horse, in regard to the form and other good qualities of the progeny.—It is the opinion of the best judges, that no idea can be more erroneous than the too common one of breeding a good hunter or saddle horse from a blood stallion and a draught mare, or to suppose that the qualities of each will be so equally blanded in their offspring as to constitute a happy medium between both, thus producing a colt in which the speed and liveliness of the sire shall be combined with the strength and consistency of the dam. The most judicious observers have remarked that there is very frequently a perceptible degeneracy even from the worst of the two; the mongrel breed rarely possessing, in any degree, the power or size of the one, or the spirit, activity, and fine bone of the other. Instead of attempting such violent crosses, it is considered more advisable, when the mare has any good points, to select a stallion as similar as possible in form, as thus there will be a probability that the foal will possess them in still greater perfection. But, notwithstanding the general truth of these axioms, persons here breed from mares of every description, when the most prudent course would be to choose a stallion as free as possible from any defects observable in the mare, or, in other words, possessing those properties in which the mares are peculiarly deficient. It is inattention to the peculiar qualities of sire and dam, and the disregard to the necessary requisites of country and keep, that has, and will, cause the production of horses that, from certain deficiencies in shape, strength, action and constitution, bear no proportional value to the expense and trouble they occasion the farmer; and, being peculiarly adapted to no one particular purpose, become an unprofitable burden to their owners, and year after year consume food which might be much more advantageously applied to the feeding of neat cattle and sheep. With every possible skill in horses, and their management, few farmers in Canada will find it profitable to breed any other description of horses but those fit for agricultural purposes. In some favourable situations and circumstances it may be prudent and not unprofitable, to breed race horses and hunters; but, the generality of farmers will do well to give all their attention to that description of stock that is suitable for his own purpose or that of his neighbour, for labour, or for furnishing the necessaries for life.

The general criteria of the qualities of a horse are derived from inspection and trial. His outward appearance among judges affords a pretty just criteria of his power, and a moderate trial usually enables the same judgment to decide on the disposition to exercise such powers.

As a general principle, dark are preferred to light coloured horses, excepting in the instance of black, which is supposed to have very few good horses. Grey are also, in some degree, an exception to the rule, for there are many good grays. Bay and brown horses are the most esteemed colours. Hardihood is generally derived from the form of the carcase, which should be circular or barrelled; by which food is retained, and strength gained to perform what is required. Such horses are generally good feeders.—Hot, fiery horses are as objectionable as horses of good coverage are desirable. Hot, fiery horses, seldom last long. A good couraged horse moves with readiness, carries one ear forward and one backward; is attentive and cheerful, loves to be talked to and caressed even when on a journey, and in a double harness will play with his mate. Good couraged horses are always the best tempered, and, under difficulties, are by far the most quiet, and least disposed to do mischief.—*Beans.*

Soap should never be used until it is a year old.—You cannot make your soap too strong, if you will give it age.

From the Kentucky Farmer

HORSE DISTEMPER, OR STRANGLES.

It is an inflammatory disease, and shows itself in young horses by the want of appetite, the dull languid look of the animal, his cough, and then a running at the nose. This disorder always affects the head more or less: it is distinguished into the false or genuine, and the malignant—the first is less a disorder than a purifying of the humours, necessary to all young horses. When the running of the nose is not abundant, a tumour is formed under the lower jaw that opens, sooner or later, and discharges a great quantity of matter. This is the genuine or benign horse distemper—the false or malignant is derived from the first, when it has not been well cured, and re-appears, and is a malady of the same kind, with the same symptoms; if it is not cured thoroughly, it turns infallibly into the glanders, very seldom cured, and devotes the animal to a certain death. The malignant distemper is accompanied with a high fever, a swelling on the head, hard breathing, and the running at the nose is so thick that it comes with difficulty; the animal must immediately be bled, in order to abate the inflammation. The nostrils must be injected with mullen or flaxseed tea, or both combined; it prevents the ulceration of the inside of the nose, and facilitates the running of the matter, particularly if a fumigation is added to the above. It is made in the following manner: boil oats in the mullen tea, or flaxseed, or bran, or any other substance which, when thick enough, retains long a sufficient degree of heat; put a small quantity of this into a bag $2\frac{1}{2}$ feet long, and large enough to admit part of the horse's head; a thong of leather or rope fastened to the bag goes over the head like a head-stall; the wash must not be too hot, as the horse could not bear the steam, much less too cold, or it would not have any effect.—When after a certain time it is cooled, take the bag off to let the horse snort the matter, if he is so inclined, and put it on again if still warm enough.

If the tumor under the lower jaw opens of itself, it should be rubbed with the following ointment; beat one or two yellows of eggs with spirits of turpentine, put some of it on a bunch of tow, held fast by a sort of covering or bandage to keep the cold from the sore; it is necessary to observe that any open sore or wound should be covered to exclude the external air and all kinds of insects. This dressing must be done every day exactly.—When the horse is cured, he must be purged once or twice in order to carry off the remains of any venomous matter. Care must be taken to water the horse out of a bucket if during his sickness he could not stoop his head to drink; as he is feverish, the want of water would increase his sickness and his suffering. During the horse's sickness, he must be dieted in the following manner: cut straw and bran; his drink, mullen or flaxseed tea, with a handful of bran, sometimes a little salt given milk-warm; if the weather be cold, a sick horse ought to be covered, if possible, or at least sheltered from the cold.

Grass founder or melted fat is an inflammation of the inner soft membrane of the bowels, lined with a mucous substance that lubricates them in that disease and looks like melted fat; it is most common in summer after too much fatigue and over feeding, or too strong a physic; it is the dysentery of horses; the animal dungs with effort, and the excretions are mixed or covered with a sort of a jelly, and sometimes slightly bloody—the animal is very thirsty, looks towards his sides which beat violently; loses his appetite, grows poor, and may lose his life if not cured in time. As soon as the disorder is known, the best remedy is injections of mullen, bran or flaxseed; very little hay, no grain. Bran and water—injections and drinks of slippery elm, if the first injection could not be procured. Boiled barley mixed with honey in small quantity, makes a cooling diet and is used with success.

SIMPLE CURE FOR COUGH IN HORSES.

Two years ago one of my carriage horses had an extremely bad cough, which had continued for six or eight months; different applications were made without effect. I applied to a man who I knew dealt in horses, and had paid some attention to their diseases for a remedy. He at once told me that he had never found any thing so effectual for a bad cough as human urine, given a few times, by discharging in a bucket of water and letting them drink it, or on their food and eat it. I directed my driver to do so, and in one week the horse was completely relieved. I have frequently had it tried with the same good effect.—*Cultivator.*

MAXIMS AND PRECEPTS FOR YOUNG FARMERS.

1 Regard all persons whose time and labor are wholly at your command, as beings for whose health, comfort, and good conduct in this life, you will be held most fearfully responsible in the life to come.

2 Never forget that both moral and bodily health depend on the same thing; that is, *temperance* in food, drink, and all sensual indulgences; and *temperance* in the use of means to get rich.

3 To wish well, is not enough; you must also do well, or your benevolence, like faith without good works, will be dead and utterly worthless.

4 Ever bear in mind, that useful knowledge, and the proper application of it, are to the health of the soul, what wholesome food and appropriate exercise are to the health of the body.

5 Value as you ought, the experience of others, and your own will cost you far less than without such aid; since to use their counsels only an effort of memory, whereas the price paid for your own will often be the loss of health, fortune, and character.

6 The more you strive to enrich your minds with every good thing which men and books can teach, the greater will be your power to gain wealth, honor, fame, and every rational enjoyment.

7 Trust not others to do for you, what you can readily and as well do for yourselves.

8 The farmer who is ashamed of manual labor, will very soon find cause to be much more ashamed of himself.

9 If you ever make a business of your pleasures, they will most assuredly soon make an end of your business.

10 Leave show to spendthrifts and fools, while you and your families consult only tasteful simplicity, comfort and usefulness, in all your arrangements and expenses.

11 Love not money for its own sake; still less for the power it gives you to gratify selfish and sinful passions. Do not regard it as the most efficient means to a benevolent purpose. You will thus make it a blessing, instead of a curse, both to yourselves and others.

12 True economy, consists not so much in saving money, as in spending it when made, *solely and judiciously* for purposes really useful. This annually increases your profits, instead of diminishing or keeping them stationary.

13 Avoid debt as you would a pestilence, for it humbles, debases, and degrades a man in his own eyes; subjects him to insults and persecutions from others; but still worse, it is a perpetual temptation, however anxiously resisted, to fraud, falsehood and theft—nay, not unfrequently, to despair and self-murder.

14 To take advantage in a bargain, is *virtually* to take money out of another's pocket, who is not aware of it. Worldlings call it "fair play," but all honest men call it "cheating and swindling."

15 The only just means of increasing wealth, are constant industry—true economy of time as well as money—well directed labor, and the regular application of a portion of our fair profits to increase our capital.

16 Never expect your lands to give you much, if you give them little; nor to make you rich, if you make them poor. Therefore, always manure them to the full extent of your means, and they will ever make you ample returns in rapidly increasing productions.

17 Economy, not less than humanity, requires you to keep all your farming stock in thriving condition; for a working animal in good order, will do much more work, and eat less than a poor one; while the rest of your stock, *well kept*, will yield more of every thing, than double their number, if half starved, as such animals often are.

18 To "see at the spigot, and let out at the bung," will soon empty the biggest hoghead; so will economy in small matters, and waste in large ones, speedily squander the largest estate.

19 In all your farming operations, never forget that *time*, like money, if once lost or mis-spent, is forever past recovery.

20 Constantly arrange beforehand, the daily work of your farms. Then none of your laborers need ever be idle in waiting to be told what he has to do.

21 Provide a place for every thing, and misplace nothing. No time will ever then be lost in searching for what you want.

22 Keep double sets of such plantation implements as are most used, and most exposed to wear and tear. The whole cost of extra sets, will be amply repaid by saving the whole time lost in waiting for repairs, where only single sets are kept.

23 Never resort to what are called "make shifts," when it is

possible to avoid it; for they encourage carelessness and sloth, of which they are almost always sure signs.

24 The very reverse of the lawyer's maxim—"de minimis non curat Lex,"—the law regards not the smallest matters—must be the farmer's guide, or his largest concerns can never prosper as they might.

25 To keep good gates and fences, saves much time and is in preventing trespasses; much loss of crops from depredations, and best of all, it saves much wrangling and ill will among neighbors, about mischievous stock.

26 If you would excel in your profession, the diligent culture of your mind is as indispensable as that of your fields.

27 Never commit the self-hurtful folly of looking upon any of the honest trades, professions and callings, as inimical to your own, for there is a natural bond of interest and amity between the whole, which cannot possibly be preserved, without the cordial co-operation of all.

28 Encourage, both by precept and example, the true spirit of Husbandry; for it promotes harmony, good will, and social intercourse among all with whom you deal; it tends to elevate your own class to its proper rank; and above all, it advances the welfare of your country, by promoting the most important of all her great interests.

29 Never flatter yourself, as some silly people do, that you know all which can be known, even of the most simple branch of your profession, or you will soon know much less than thousands of your more modest, less assuming brethren. But always act under the firm belief, that there is no ascertainable limit to our acquisitions in any art or science whatever; for any difficulties which constant, diligent study can not overcome. Your progress, then, towards the highest attainable point in whichever you prefer, will be as sure as fate itself. The accidents and vicissitudes of life may possibly interrupt your course; but *only persevere*, and you will finally conquer, with absolute certainty, all obstacles that are not insuperable.—*Correspondent of Cultivator.*

SIGNS OF A POOR FARMER.—He grazes his mowing land late in the spring. Some of his cows are much past their prime. He neglects to keep the dung and ground from the eills of his building. He sows and plants his land till it is exhausted, before he thinks of manuring. He keeps too much stock, and many of them are unruly. He has a place for nothing, and nothing in its place. If he wants a chisel or a hammer, he cannot find it. He seldom does anything in stormy weather, or in an evening. You will often, perhaps, hear of his being in the bar-room, talking of hard times. Although he has been on a piece of land twenty years, ask him for grafted apples, and he will tell you he could not raise them, for he never had any luck. His indolence and carelessness subject him to many accidents. He loses cider for want of a hoop. His plough breaks in his hurry to get in his seed in season, because it was not housed; and in harvest, when he is at work on a distant part of his farm, the hogs break into his garden, for want of a small repair in his fence. He always feels in a hurry, yet in his busiest day he will stop and talk till he has wearied your patience. He is seldom neat in his person, and generally late at public worship. His children are late at school, and their books are torn and dirty. He has no enterprise, and is sure to have no money, or if he must have it, makes great sacrifices to raise it; and as he is slack in his payments, and buys altogether on credit, he purchases every thing at a dear rate. You will see the smoke come out of his chimney long after day-light in winter. His horse-stable is not daily cleansed, nor his horse curried. Boards, shingles, and clapboards, are to be seen off his buildings, month after month, without being replaced, and his windows are full of rags. He feeds his hogs and horses with whole grain. If the lambs die, or the wool comes off his sheep, he does not think it is for want of care or food. He is generally a great borrower, and seldom returns the thing borrowed. He is a poor husband, a poor father, a poor neighbor, a poor citizen, and a poor Christian.—*Baltimore American.*

MAKE HOME HAPPY.—It is a duty devolving upon every member of a family to endeavor to make all belonging to it happy. This may, with a very little pleasant exertion be done.—Let every one contribute something towards improving the grounds belonging to their house. If the house is old and uncomfortable, let each exert himself, to render it better and more pleasant. If it is good

and pleasant, let each strive still further to adorn it. Let flowering shrubs and trees be planted, and vines and woodlives be trailed around the windows and doors; add interesting volumes to the family library; little articles of furniture to replace those which are fast wearing out; wait upon and anticipate each other's wants, and ever have a pleasant smile for all and each.

Make home happy! Parents ought to teach this lesson in the nursery, and by the fire-side; give it the weight of their precept and example. If they would, ours would be a more happy and virtuous country. Drunkenness, profanity, and other disgusting vices, would die away; they could not live in the influence of a lovely and refined home.

Does any one think, "I am poor and have to work hard to get enough to sustain life and cannot find time to spend in making our old house more attractive?" Think again: is there not time every day which you spend in idleness, or smoking, or mere listlessness, which might be spent about your homes? "Flowers are God's smiles," said Willberforce, and they are as beautiful beside the cottage as the palace, and may be enjoyed by the inhabitants of the one as well as the other.—There are but few homes in our country which might not be made more beautiful and attractive, not to strangers only, but to their inmates. Let every one study then, and work, to make whatever place they may be in, so attractive that the hearts of the absent ones shall go back to it as the Dove did to the ark of Noah.—*American Farmer.*

THE MEANS OF IMPROVING THE BREEDING OF ANIMALS.

By improvement of a breed is to be understood the producing such an alteration in shape or description, as shall render the animal better fitted for the labour he has to perform; better fitted for becoming fat, or producing milk, or wool, or particular qualities of these. The fundamental principle of this amelioration is the proper selection of parents. First, by breeding from choice individuals of the same parentage, called the *in-and-in* system; second, breeding from individuals of two different offsprings or varieties, called the system of *cross-breeding*; and third, breeding from animals of the same variety, but of different parentage, which may be called breeding in the *line*, or in the same race.

Breed in the same line is, however, the system at present adopted by what are considered the best breeders.

The size, form, and general properties of the inferior animals in a state of nature, may be always traced to the influence of soil and climate; therefore, climate, soil and quantity, and quality of its produce, in a great measure, prescribe to the husbandman the kind of stock which he ought to employ for consuming that produce. Where he has not a constant supply of rich pasture, such as they have in England and Ireland, he cannot cultivate profitably the larger, and most improved breeds of these countries. To select animals that will thrive upon the pastures of Canada, is the first object of the farmer here. His situation, and circumstances must determine his crop, and must also determine the particular description of his live stock.

Early maturity is a most valuable property of all sorts of live stock. With regard to those animals which are fed for their carcasses, it is of peculiar importance that they should become fat at an early age, because they not only return the price of their food, with the profits of the feeder, but in general also, a greater value for their consumption than slow-feeding animals. A propensity to fatten at an early age is a sure proof that an animal will fatten speedily at any after period of its life. Tameness and docility of temper are desirable properties in most of the domesticated animals. The quantity of the flesh, and the proportions which the fine and coarse parts bear to each other, and the weight of both to that of the ossa, constitute the comparative value of two animals of equal weight.

The first of these properties seems to be determined by the breed and food; the second by the form and proportion of the animal; and a third, by all these and its degree of fatness. The flesh of well formed small animals, both of cattle and sheep, is well known to be finer grained, of a better flavour, more intermixed with fat, and to afford a richer gravy than that of the large animals, and it brings a higher price accordingly, (by nearly a penny per pound,) in all the principal markets of England and Ireland.

The desirable properties of animals are different according to the purposes to which they are applied. The principal production

of live stock are meat, milk, labour and wool. A breast of cattle equally well adapted to the butcher, the dairy maid and the plough, would be very desirable, but are scarcely to be found. These properties are by most judges, considered to be inconsistent with one another, and to belong to animals of different forms and proportions. With regard to sheep, I believe that *very fine wool* cannot be produced by such as have the greatest propensity to fatten, and will return the most meat for the food they consume. In Canada, the wool of the sheep is a very great object to the farmer, and bears a much higher proportionate value to the carcass than in England; therefore, a good description of sheep, producing long wool, of reasonable fineness, are the best adapted to this country.

The shapes which indicate a propensity to fatten in the shortest time, and with the least consumption of food, and lay the fat upon the most valuable parts of the carcass, are considered to be the following.

The head, bones, and less valuable parts, ought to be fine, clean, and as small as possible. The collar full at the breast and shoulders, and tapering gradually to where the neck and head join.—The bosom broad and the chest deep. The carcass should be large, and the ribs standing out from the spine, both to give strength of frame and constitution, and likewise to admit of the intestines being lodged within the ribs, but yet not to be what is called high ribbed. The shoulders ought not only to be light of bone, and rounded off at its lower point, but also broad, to impart strength, and well covered with flesh. The back, from the shoulder to the tail should be broad, flat, and nearly level; the quarters long, and the flank full and large. Round bodied, and barrel-shaped animals, with clean heads, necks, and throats, small legs, and the least appearance of ossa, will be easiest fattened, and pay most for the food they consume.

A breed may be said to be improved when some desirable property, which it did not possess before, has been imparted to it, and also when its defects have been removed or diminished, and its valuable properties enhanced. Improvement, in its most extensive application to the live stock of a country may also be effected when, by a total or partial change of live stock, the value of the mutual produce of the soil is augmented, and a greater quantity of human food and other desirable commodities obtained from it.—Whatever may be the merit of that skillful management which is necessary to the formation of a valuable breed, a considerable degree of the same kind of merit may be justly claimed by those who shall introduce and establish it in situations where its advantages have never been contemplated, and in which the obstacles to its success may appear almost insurmountable.

That the breed of animals is improved by the largest males, is a very general opinion, according to some in reverse of the truth, and has done considerable mischief. The great object of breeding, by whatever mode, is the improvement of form, and experience has proved that this has only been produced in an eminent degree in those instances in which the females were larger than in the usual proportion of females to males, and that it has generally failed where the males were disproportionately large. The following epitome of the science of breeding is by the late eminent surgeon, Henry Cline, who practised it extensively on his own farm at Southgate. Though some breeders have disapproved of Mr Cline's system, yet it has been translated into most of the Continental languages, and has lately been illustrated by M De Dombastie in France, and by others.

On the size, soundness, and strength of the lungs, the health of animals principally depends. The power of converting a given quantity of food into more nourishment than one with smaller lungs, and its capacity depends on its form more than on the extent of its circumference; for when the girth is equal in animals, one may have much larger lungs than the other. A circle contains more than an ellipsis of equal circumference. A deep chest, therefore, is not capacious unless it is proportionately broad.

The head being small generally indicates that the animal is of a good breed. Horns are particularly injurious to sheep. The skull of a ram, with its horns, weighed five times more than a skull that was hornless, both the skulls being taken from sheep of the same age, four years old. The natural size of the head was the same in both, independent of the horns. A mode of breeding which would prevent the production of horns, would afford a considerable profit in the increase of meat, wool, and other valuable parts in sheep.

To obtain the most improved form, the two modes of breeding

described as the *in-and-in* and *crossing* mode have been practiced. The first mode may be the better practice, when a particular variety approaches perfection in form, especially for those who may not be acquainted with the principles on which improvement depends. When the male is much larger than the female, the offspring is generally of an imperfect form. If the female be proportionately larger than the male, the offspring is of an improved form. For instance, if a well-formed large ram be put to ewes proportionately smaller, the lambs will not be so well shaped as their parents; but if a small ram be put to larger ewes, the lambs will be of an improved form.

The proper method of improving the form of animals consists in selecting a well formed female, proportionately larger than the male. The improvement depends on the principle, that the power of the female to supply her offspring with nourishment is in proportion to her size, and to the power of nourishing herself from the excellence of her constitution. The size of the fetus is generally in proportion to that of the male parent; and, therefore, when the female parent is disproportionately small, the quantity of nourishment is deficient, and her offspring has all the disproportions of a starveling. But when the female is large, she is more than adequate to the nourishment of a fetus of a smaller male than herself.

To obtain animals with large lungs, crossing is the most expeditious method. By selecting large well-formed females to be put to a well formed male of variety that is rather smaller, will produce this improvement, considered so necessary by Mr. Cline. If a hornless ram be put to horned ewes almost all the lambs will be hornless, partaking of the character of the male more than of the female parent. Crossing with hornless bulls will often produce the same results.

Examples of the good effects of crossing may be found in the improper breed of horses and swine in England. The great improvement of the breed of horses arose from crossing with diminutive stallions, Barbs and Arabians; and the introduction of Flanders mares into this country was the source of improvement in the breed of cart-horses. The forms of the swine have been greatly improved, by crossing with the small Chinese boar.

Examples of the effects of crossing the breed are more numerous. When it became the fashion in London to drive large bay horses, the farmers in Yorkshire put their mares to much larger stallions than usual, and thus did infinite mischief to their breed producing a race of small-chested, long-legged, large-boned worthless animals. A similar practice was adopted in Normandy, to enlarge the breed of horses there, by the use of stallions from Holstein, and, in consequence, the best breed of horses in France would have been spoiled, had not the farmers discovered their mistake in time, by observing the offspring much inferior in form to that of the native stallions. Some graziers in the Isle of Shepy, conceived that they could improve their sheep by large Lincolnshire rams, the produce of which, however, was much inferior in the shape of the carcass and the quality of the wool; and the flocks were greatly impaired by this attempt to improve them. Attempts to improve the animals of a country by any plan of crossing should be made with the greatest caution; for by a mistaken practice, extensively pursued, irreparable mischief may be done. In any country where a particular race of animals has continued for centuries, it may be presumed that their constitution is adapted to the food and climate.

The policy of the animal economy is such, that an animal will gradually accommodate itself to great vicissitudes of climate, and alterations in food and by degrees undergo great changes in constitution; but these changes can be effected only by degrees, and may often require a great number of generations for their accomplishment. It may be proper to improve the form of a native race, but at the same time it may be very injudicious to enlarge their size, for the size of animals is commonly adapted to the soil and climate which they inhabit. Where produce is nutritive and abundant, the animals are large, having grown proportionately to the quantity of food which for generations they have been accustomed to obtain. Where the produce is scanty, the animals are small, being proportioned to the quantity of food which they were able to procure. Of these contrasts the sheep of Lincolnshire and of Wales are examples. The sheep of Lincolnshire would starve upon the mountains of Wales.

The general mistake in crossing has arisen from an attempt to increase the size of the native race of animals being a fruitless

effort to counteract the laws of nature. No attempt to enlarge the size of animals, by any mode of breeding, will ever succeed without a corresponding change in the quantity and quality of their food, and their means of procuring it without much fatigue. The climate also requires attention. An improved short horn could never arrive at perfection on the scanty and coarse fare, and severe climate of the Highlands of Scotland. Size, in fact, is a very subordinate consideration. The great object, as observed above, is to obtain the greatest possible return for the food consumed; and it is only where the quantity and quality are in great abundance, that large animals, if of a good description, may be preferred to small ones.

Arabian horses are, in general, the most perfect in the world, which probably has arisen from great care in selection, and also from being unmixed with any variety of the same species; the males, therefore, have never been disproportioned in size to the females.

The native horses of India are small, but well proportioned. With the intention of increasing their size, the East India Company have adopted the plan of sending large stallions to India. If these stallions should be extensively used, a disproportioned race must be the result, and a valuable breed of horses may be irretrievably spoiled. From theory, from practice, and from extensive observation, the last more to be depended on than either, it is reasonable, Mr. Cline observes, to form the conclusion; it is wrong to enlarge a native breed of animals, for in proportion to their increase of size, they become worse in form, less hardy, and more liable to disease.

The above opinions may be considered as supported by the most eminent practical breeders, as Bakewell, Cully, Lord Sumerville, Perry, and others, and by most theorists, as Coventry, Darwin, Hunt, Young, &c., though some persons of less experience may be of a contrary opinion.

George Cully, a Northumberland farmer of great practice in breeding and feeding, in his observations on live stock, not only concurs in this principle as far as respects quadrupeds, but considers it to hold good in the feathered tribe, and in short, in animals of every kind. His conclusion is, "That of all animals, of whatever kind, those which have the smallest, cleanest, and finest bones, are in general the best proportioned, and covered with the best and finest grained meat. "I believe," he adds, "they are also the hardiest, healthiest, and most inclinable to feed; able to bear the most fatigue while living, and worth the most per pound when dead."

After the birth, the first interference on the part of man should be, that of supplying the mother with food of a light and delicate quality, compared with that which she had been in the habit of using, and also of administering the same description of food to the offspring, as far as it may, by its nature, be able to use it. As the animals increase in size and strength, they should have abundance of air, exercise, and food, according to their nature; and whatever is attempted by man in the way of taming or teaching, should be conducted on mild and conciliating principles rather than on those of harshness and compulsion.

The purposes for which animals are fed or nourished are for promoting their enlargement of growth, for fitting them for labour, for the increase of certain animal products, or for fattening them for slaughter as human food. In the fattening of cattle, the following points require to be attended to: abundance of proper food, a proper degree of heat, protection against extremes of weather, good air and water, tranquillity, cleanliness, comfort, and health.

Food, though it must be supplied in abundance, ought not to be given to satiety. Intervals of resting and exercise must be allowed according to circumstances. Even animals grazing in a rich pasture have been found to feed faster when removed from it once a day, and either folded or put in an inferior pasture for two or three hours. Coarser food may be first given to feeding animals, and as they acquire flesh, that which is of more solid and substantial quality. In general it may be observed, that if the digestive powers of the animal are in a sound state, the more food he eats the sooner will the desired result be obtained; a very moderate quantity beyond sufficiency constitutes abundance; but by withholding this additional quantity, an animal, especially if young, may go on eating for several years without ever attaining to fatness. An ox properly treated, of moderate size, will fatten on good pasture in from three to five months. Young growing animals require less rich food than such as are of mature age. Unless food be the

roughly deprived of its vegetative powers before it enters the stomach, the whole nourishment which it is capable of affording cannot be derived from it. In the case of the leaves and stalks of vegetables, this is in general effected by mastication; but it requires some care to accomplish it in the case of grains. Hence the advantage of mixing corn given to horses or cattle with chaff of cut straw; and hence it is supposed by some, that the instinct which fowls have to swallow small stones, is intended by nature for the same object. But the most effectual mode of destroying the living principle is by the application of heat; and if vegetable food of every kind could be steamed or boiled before it was given to animals, (at least in winter,) for fattening for the shambles, or feeding for milk, it is rendered probable, by analogy and experiment, that much more nourishment would be derived from it. Salt may be advantageously given to all animals; it acts as a stimulant to the appetite, promotes the secretion of bile, and in general, is favourable to health and activity, and preventing or curing diseases.

In the excessive heats in summer, animals require shade, and abundance of good water at all times. Water ought to be soft and pure, of a moderate temperature, under that of the open air in hot weather, and exceeding it in winter. Except in giving warm drinks, mixed with a little meal, or other rich matter, it is not supposed that liquid food is so generally advantageous for fattening animals, as that which being equally rich is solid. It is not necessary to give water to animals for some time after eating; animals pasturing in the field seldom seek water after filling themselves; they generally lie down first, and after the process of digestion seems to have gone on for some time, they then go in quest of water. To give water to housed animals, in an hour or an hour and an half, after what may be called their meals, will, I believe, be the best time.

Cleanliness is favourable to health, by promoting perspiration and circulation. Animals in a wild state attend to this part of their economy themselves; but in proportion as they are cultivated, or brought under the controul of man, this becomes out of his power; and to insure their subserviency to his wishes, this part of the culture as well as others, must be supplied by art. Combing and brushing stall-fed cattle and cows are known to contribute materially to health. Bathing or steeping the feet of stalled animals occasionally in warm water, would, no doubt, contribute to their health. Bathing swine in hot water, as in that used for boiling or steaming food, has been found a real advantage.

An animal may be well fed, lodged and cleaned, without being comfortable in every respect; and in brutes, as well as man, want of comfort operates on the digestive powers. If the surface of a stall in which an ox or a horse stands, deviates much from a level, he will be continually uneasy; and he will be uneasy during night if its surface is rough, or if a proper bed of litter is not prepared every evening for him to repose on. The form of racks and mangers is often less commodious than it might be. It should be a duty as agreeable as it is conducive to our own interest to promote as much as possible the comfort of those animals whose lives are shortly to be sacrificed for ours. A good state of health will, in general, be the result of a proper mode of feeding and treatment; but in proportion as our treatment, either of ourselves or other animals, is refined or artificial, in the same proportion are the functions of nature liable to derangement or interruption from atmospherical changes, and various accidental causes.

REARING OF NEAT CATTE.

The mode of rearing calves is various. There can be no doubt but the most natural mode is that of allowing them to suck their dams; but this is not certainly the best or most profitable mode, and the finest calves I have ever seen, were reared on skim milk. Bullock calves of the long horned breed, so fed, I have repeatedly seen sold at a year old, in Ireland, 100 in a lot, at from £7 to £9 sterling each, during the late war.

When calves are reared on skim milk, it should be boiled, and suffered to stand over until it cools to the temperature of that first given by the cow, or a trifling degree more warm, and in that state it should be given to the calf. Milk is often given to the calf warmed only, but that method will not succeed so well as boiling it. If the milk is given over cold, it will cause the calf to purge. When this is the case, two or three spoonfuls of rennet put in the milk, will soon stop the looseness. If, on the contrary, the calf is bound, pork-broth is a very good and safe thing to put in the milk.

One gallon of milk per day will keep a calf well at first. The usual allowance is about double that, after the first eight or ten days, and this is increased with the age of the animal, though not very greatly. When the calf is about thirteen weeks old, it will do very well upon grass, without milk. A small quantity of oats and bran, about a pint each, given to the calf at mid-day would be of great service when the calf is capable of eating it; they should also be enticed to eat hay and have it constantly before them. The calf should have its portions of milk at fixed hours of the day, at eight o'clock in the morning, and four in the afternoon, and be regularly served at these hours or he will not thrive. It has been found by experiments, that it is not absolutely necessary to give milk to calves after they are one month old: to wean them gradually, two quarts of milk, with the addition of flaxseed boiled in water to make a gruel, given together will answer; and by diminishing the milk gradually, the calf will soon do without any. Hay-tea will do, with the like addition of two quarts of milk, but it is not so nutritious as flaxseed. The method of making hay-tea, is to put such a portion of good sweet hay as will be necessary into a tub, then to pour on a sufficient quantity of boiling water, covering up the vessel, and letting the water remain long enough to extract the virtues of the hay.

In summer, calves may be reared on sweet cheese whey only. The Duke of Northumberland's receipt is, to take one gallon of skimmed milk, and to about a pint of it add one ounce of common treacle, stirring it until it is well mixed, then to take one ounce of linseed oil-cake finely pulverized, and with the hand let it fall gradually, in very small quantities into the milk, stirring it at the same time with a spoon or ladle, until it is thoroughly incorporated; then let the mixture be put into the other part of the milk, and the whole made as warm as new milk when first taken from the cow, and in this state it is fit to be given to the calf. The quantity of powdered oil-cake may from time to time be increased, as the calf becomes accustomed to it. Another method is, to boil one quart of flaxseed in six quarts of water, for ten minutes, and then mix the jelly with a small quantity of hay-tea; on this calves are reared without any milk. It will be good for calves in summer when there is grass, to put them on sweet rich pasture after they are eight or ten days old. The time of performing the operation of castration in horned cattle, as in all kinds of live stock, except horses, is while the animal is yet very young, and just so strong as to endure this severe operation without any great danger of its proving fatal. The males accordingly are cut commonly from a week to a month old, and the females, if castrated or spayed, from one to three months old. This operation ought not to be neglected at this age.

Calves should have good pasture from the time they are weaned till the winter, and during the winter should have abundance of good sweet hay, on which they will thrive without any other food. They should have a house to themselves, with a rack or manger for the hay, and a small yard if convenient, to keep them separate from the larger stock. I think it unnecessary to mention roots, such as turnips, potatoes or carrots, as food for calves; farmers who may have abundance of these vegetables, will find more profitable consumption for them in fattening full grown stock; and calves will not require them if they get a sufficient quantity of good hay.—*Evans.*

TO PREVENT THE RAVAGES OF RATS IN GRAIN.—How to prevent the ravages of rats in grain after it is housed, has been an inquiry of long standing. We can never exterminate them to such a degree as not to apprehend their incursions, for a horde of these troublesome visitors will often make their appearance when we least expect them. Instinct points the way to where the provision best suited to their nature is found most plentiful. We have often found, when we went to thrash, our oats cut and cleaned by them, and the straw rendered unfit for any purpose whatever, even the subservient one of litter.

But every evil has a cure; and I have found common elder to be a preventive, and have tested its properties as an anti-rat application. When the grain is to be packed away, I scatter a few of the young branches over every layer of bundles, being mindful to have them in greatest abundance on the edges of the pile. The drying of the twigs will give the grain an odor not relished by the vermin—which scent in no wise detracts from the quality of the straw for horses, as it makes no difference with them. I have tried it successfully, a number of years in wheat, oats and corn.—*Selected*

ON AGRICULTURAL MACHINERY.

"Should these letters be fortunate in promoting the establishment of societies throughout the Province, and in stirring up a spirit of internal improvement, the first visible effect will be the appropriation of funds, contributed by the local Associations, and placed under the direction of the Central Board in Halifax, to import, as models, all the various implements of latest and most improved construction.—There is no symptom of more ominous aspect in the present state of our husbandry, nor any thing which more clearly marks its depressed condition, than the want of those common instruments, which every farmer possesses in England, and which are conceived essential to his success. A weeding-plough, a cultivator, a grubber exist not in Nova-Scotia; and in all my peregrinations, I have not met more than once with the double moulded plough for the drill system, and that with immovable earth boards, and but seldom with the roller. To expect wheat for the subsistence of our population with such execrable husbandry is outraging the laws of Nature, and waging war with Heaven. The fine crops, which so often bless our indolence, owe nothing to our skill, but are the gifts of our superior climate, and most productive spils. The same labour and machinery in Great Britain, with her present immense population, would terminate in famine, and all its concomitant horrors. It is time that we should know the different instruments, which are now universally employed in modern practice, that we may compare them with those in use among ourselves. A brief description of these shall now occupy our attention, and as I shall both praise and dispraise, sometimes condemn with unqualified reprobation, and at others freely recommend, it may be proper to introduce my readers to a knowledge of the principles on which my judgement shall be founded, by which they may be enabled to accompany me in my critical investigations. With this view, I shall devote this letter to explain the uses which agricultural machinery serves in preparing the ground for vegetable production; and these may be reduced under the four following heads:—It serves to breaken, loosen, and pulverize the soil; to destroy the remains of the pre-existing crop, and extirpate weeds, to bury both seeds and manure at proper depths: and lastly to level all inequalities, and make way for the drill and horse-hoeing system.

I.—The use of machinery is to break and pulverize the soil.—The earth from its own gravity naturally settles down into a hard, compact, and impenetrable body. While in this state the roots of plants,—which are the collectors of the food,—cannot find a free passage, nor overcome the continued resistance. The activity of vegetable life may push them a little from the main stem; but they can neither ramble at large, nor draw the same copious supply of nutriment. When we trace roots to the boundary of their range, we are struck, both at the distance to which they travel, and at the obstacles they surmount. Mr. Peters, President of the Blackley and Merriion Society states, that, a grain of wheat, if planted in a mellow soil, will strike its fibres three feet downwards, and elongate them much farther horizontally. The roots of oats have often been discovered at eighteen inches from the stem; and those of the turnip, which, with the exception of the bulb and tap-root issuing from it, are all slender flexible threads, have diverged on all sides to the distance of twenty inches. This doctrine may be illustrated in the garden as well as in the field, and in most cases in the former, with greater effect; because there the cultivation is superior, and is carried to a greater depth. The fibres proceeding from an onion are of a whitish spongy substance, and are distinctly discernable in a black mould; and these have been found to descend fully two feet in a trenched soil. The carrot will often measure from twelve to fourteen inches; and the fibres which fed it must have sunk much deeper. The potatoe will push out leaders to the distance of fifteen and eighteen inches in a sandy open loam, well stirred with the hoe.—These facts lead irresistibly to the conclusion, that the skillful cultivator should prepare the soil for the utmost extension of the roots, and should employ such instruments as will pierce it deeply, and crumble it to powder, for the free and unrestrained passage of the radical fibres. If the ground be ploughed only three inches deep, the roots can descend no farther than the share and coulter have gone before them: and if a tangled sod of grass be merely turned over without being broken and pulverized, they will find vast difficulty in stretching themselves through this matted net-work.—The same observations will apply, if the surface be encumbered with unsubdued and unbroken clods. The roots will be unable to penetrate their hard coats, and how-

ever full of vegetable nourishment, it must be lost, be ause inaccessible to these dispersed feeders of the crop. The fitness, therefore, of every instrument to break and loosen the soil, becomes a criterion in judging of its merit: and its perfection is exactly proportioned to the superiority of its structure for accomplishing this essential end.

II.—Another use of machinery is to destroy the remains of the old crop, and extirpate weeds.—The term *weed*, in common language, is applicable to all those plants, which spring up from their congeniality to the soil and climate, and which are of no value either for use or ornament: but in the language of agriculture, every thing is so called, which extracts nourishment from the earth at the expense of the growing corn. The grasses are pests in a field of turnips; and a potatoe is mischievous in an onion bed. The manure deposited in the ground is destined exclusively for the support of what is meant to be raised, and every plant, therefore, which lives upon it, is so far noxious and ought to be extirpated. Hence the common maxim—"A farmer should let nothing grow but his crop."

Most weeds can be destroyed by being overturned by the plough, covered with earth, and excluded from the external air. They submit at once to the process of putrefaction, and add to the fertility of the soil which produced them. There are others again, so tenacious of vegetable life that although buried—both roots, stem, and leaves—to a considerable depth, they shoot up afresh, and grow with the utmost luxuriance. The common crowfoot, which flowers with a yellow cup consisting of five obtuse petals, and is well known in all our pastures, belongs to this class. It is completely indestructible, though ploughed down, and buried in the ground, and many of our grasses possess the same property. The couch-grass, for instance, propagates by sending from every joint a new stem, and although cut into a thousand pieces, and seemingly destroyed, it will spring anew, if at all within the influence of the solar heat. This last order of weeds can only be extirpated by being brought to the surface, gathered into heaps, and carted off the field. They abound in almost all lands: and harrows of various forms have been constructed to tear them from the soil, and latterly, I believe in the year 1816, a peculiar instrument has been formed for this purpose in Scotland, styled the revolving Brake-Harrow.

The first class of plants and weeds are nearly as troublesome as the last to the farmer: and it comprehends the most of annuals propagated by shedding their seeds, the clovers and tender grasses, and all the corn species. By simple ploughing the green verdure which clothes the fields, is buried to rise no more; and all the plants composing this carpet, with a very few exceptions, ferment and hasten to decay. It is in this way that we get rid of the remains of the pre-existing crop, destroy the cultivated grasses, and kill the new race of annual weeds. The destruction is complete, provided the operations of the plough be conducted with skill and judgment, and provided also, its structure be formed on principles calculated to answer this great and important end. The general rule, which in this case ought to be observed, can admit of a very strict definition, and allows but little latitude in the performance of the work—the furrow-slice, as it is cut and laid down by the plough should be inverted at an angle of from 45° to 50° ; the green side turned downward, and the fresh mould appearing on the surface. Such instruments therefore, and there are many in this Province, which set the furrow-slices on an edge of less inclination, and leave a narrow stripe of green visible in the line of their junction, are utterly worthless, and should be universally reprobated. The weeds and grasses spring vigorously out at this opening; and in a short while the whole benefits of the ploughing are lost: for they rise with the growing corn, contend with it in its progress, and during the whole season rob it of its nourishment.

III.—Another use is to bury the dung and seed at proper depths in the soil. If any part of the dung be left exposed on the surface after the operations are completed, it is absolutely thrown away by this mismanagement. There, it mostly passes into aeriform products, mixes with the atmosphere, and is carried off by the winds. Its value is as much annihilated to the owner, as if he had tossed it into the neighbouring brook to be borne away by the current: except, perhaps, with this slight difference, that the small quantity of residual earth, which remains after putrefaction, adds to the future fertility of the spot. This is of no small account, that every farmer should be careful in covering up his manure, and conducting his ploughing with the professed design of burying it completely. As it decomposes in the soil, the soluble and volatile parts are absorbed,

water into the roots or leaves, and give vigour and aliment to the crop.

It is no less necessary to cover the seed from the action of the far rays, as their influence, however they may promote the future growth of the plant, is hostile to the process of germination. During this first stage, it absorbs oxygene from the atmosphere, and emits carbonic acid: which is the converse of what happens after the leaves expand, and during its whole progress to maturity. On this account all seeds naturally germinate in darkness, and covet the light, because the leaves, which are the organs of respiration, are not yet unfolded. If seeds, however, pre buried at too great a depth, they are debarred by the intervening earth from all contact with the external air; and as they cannot absorb by their roots any portion of oxygene, they lie there pent up, without bursting into life. When they are turned up again next spring, the air gets access to them, and imparts its oxygene; and suddenly starts into existence. It is in this way that a new ploughed field is soon overgrown with annuals, from the germination of the seeds which lay under its surface all the preceding twelvemonth.

IV.—The last use of instruments is to level all the inequalities of the ground and prepare it for the drill and horse-hoeing husbandry. In every country Agriculture must remain in its infancy till this system be introduced; and I shall strain every effort to merit the attention of my readers on its importance, and if possible, bring it into general practice. We have a vast extent of ground admirably adapted for its operations, in our marshes and intervals; and even much of our uplands which have been long under culture, and cleared of the trunks, is ripe for the improvement. It will give all these lands a double value, and nearly triple their annual produce. It will force us to train up expert ploughmen, to subdivide and pulverize the soil, to employ care in collecting, and economy in the application of manures, and last of all, it will provide food for a larger stock of cattle than we now rear, and at the same time produce abundance of bread-corn for the use of the inhabitants. The adoption of this system will be followed by an immediate improvement in our implements of husbandry, by an increased productiveness of the soil, by a flow of wealth into the landed interest, by an additional demand for labour, by a progressive population, and finally, by that most enviable of all situations,—independence of American supplies for our own consumption.—*Extract from Agricola, Letter 16.*

NOTES ON EUROPEAN AGRICULTURE.

Under this title, an intelligent writer in the *Charleston Southern Cabinet*, has published a series of papers on the agriculture of the various European countries, which are of a most interesting character, as showing the principal points in which their farming differs from ours, and the various ways in which ours is susceptible of improvement. We can give only a few extracts, where we could be pleased to quote columns.

Of Scotch farming, he says: "A farmer by the name of Thomas Oliver, residing five or six miles from Edinburg, leased a farm for the last twenty years of 150 acres, paying annually a rent of 10 guineas per acre (\$7,000) on which he raised hay, grain, and vegetables for the market of Edinburg. This lease he has recently renewed for fifteen years (the usual time to which leases run) on the same terms, and from a poor man he has become independent in his circumstances, and now rides in his carriage. What American farmer could make a profit that would enable him to pay such enormous rent? All may be accounted for on the principle of judicious management, and careful industrious cultivation."

Good management and good cultivation, will doubtless perform wonders, but we think there are other causes operating to prevent the farmer of this country realizing the profits of the old, and of these the two most prominent are the difference in the price of labour, and the difference in the price of products between that country and this. These two items are of vast importance in an estimate of comparative profits, and we have reason to think are too frequently overlooked by travellers and others.

He gives the following lively and just picture of the agricultural affairs in some parts of Germany; and there is no truth more conclusively proved, than that an improved agriculture and fairs usually accompany each other.

"On the continent, especially in Germany, their annual fairing together the farmers and peasants of all the surrounding country, where their ambition and industry are stimulated by a variety of fetes, the distribution of prizes to successful competitors;

and while princes, dukes, and barons are engaged in awarding prizes to those who have been most successful in the cultivation of grains and cattle, their lovely wives are occupied in a humbler, but much more lively scene, in complimenting and distributing premiums to the industrious housewife, for her fine specimens of fruit—her butter and cheese—her linen cloths, weaving, knitting, and other manufactures. I have no doubt I shall be ridiculed for my want of taste, when I state, that to me, the Grand Dutchess of Baden, presenting a silver cup to a peasant girl, before an assembled crowd of farmers and nobility, for the finest specimen of manufactured gloves, was a more interesting sight than that of the gay Queen Victoria racing through St. James Park, with fifty fools at her heels, striving not to be distanced by their lovely mistress."

Speaking of the great attention paid to seeds in Europe, and the necessity there is for this where good crops are expected, and the extended nature and importance of the seedsman's occupation, he remarks: "I noticed at Edinburg, in the collection of Lawson and Son, Seedsman and Nurserymen to the Highland and Agricultural Society of Scotland, 83 varieties of wheat, 62 of peas, 51 of turnips, 146 of potatoes, and an immense number of species and varieties of the grape."

"To England he awards the palm of high and neat cultivation, 'its neat cottages adorned by the eglantine, honey-suckle, and ivy, chequered here and there by the park and lordly palace, rendered the whole land a picturesque garden.' The soil of Belgium is better than the English generally, and the excellence of the wheat of Denmark surprised and gratified him. To the grumblers about our country and its institutions, we recommend his remarks on the taxer and grinding oppressions of the old world, and think the result will be the same that the sight of these things were on him, a more fervent attachment to our Republic and our American home.

COMPARATIVE PROFITS OF SMALL AND LARGE FARMS.

We have received from D. W. Grant, Esq., of Bloomfield, (Conn.) an estimate of the comparative expense, crops and profits of two farms, one of 20, and the other of 100 acres; the most material points of which will be found below. In the note which accompanied the estimate, Mr. G. remarks:

"I commenced farming 12 years ago, with 500 acres of improved land, on the old system of farming. As I have been unable to personally labor, I have been under the necessity of hiring all my labor done, and I found by cultivating middling lands, and sending men to a considerable distance to work, that the expenses absorbed the income. I began to change my mode of practice some years since, and sold one half of my acres, and by improving the remaining half, I have now the pleasure of seeing them produce more than the whole formerly did: and I have no doubt but that I could sell the one half I now have, and in time, with labor judiciously applied, make the remaining half produce as much as the whole does, and with greatly increased profits. If you wish, Messrs. Editors, to stop our young men from going from the old States to the West, advocate the system of small farms. On this depends in my opinion, the future wealth of the old States. There is no necessity for emigration from the east to the west for one hundred years, and I have no doubt by diminishing the size of our farms, and I have no doubt by diminishing the size of our farms, and giving them a more thorough and better cultivation, our wealth and population can be doubled in twenty years. Our Agricultural Society of Hartford County, have offered a premium for the best farm containing not less than twenty acres. If you will examine the statements I send you, I think you will agree with me they are about right."

Mr. Grant, in his estimate supposes the capital invested in the two farms to be the same, viz. 100 acres at 40 dollars per acre, and 20 acres at 200 dols. per acre, in both cases 4,000 dollars. His estimate of the crops and their value on the 100 acres, is as follows:

Twenty acres in mowing. (1 ton to the acre, average produce in Bloomfield,) worth to feed stock 7 dols. & 1/2 ton, 20 tons.....	\$140 00
Ten acres corn, 30 bushels to the acre, at 50 cents.....	150 00
Ten loads of corn stalks at 3 dols. & 1/2 load.....	30 00
Three acres potatoes, 150 bushels & 1/2 acre, at 16 cents.....	72 00
Seven acres of rye, 12 bushels & 1/2 acre, at 75 cents.....	63 00
Ten acres of oats, 20 bushels to the acre, at 30 cents.....	60 00
The mowing and cultivated crops take up 50 acres of the farm, leaving 60 acres for pasturing, which will keep,	

and keep well, 1 yoke of cattle, 7 cows and a horse, 10 head at 6 dols. each 60 00

Produce worth to feed to stock\$575 00

Mr. Grant's estimate of the expense of cultivating each of these crops is drawn up with great minuteness, and a careful examination has convinced us with a close approximation to the truth; but our limits oblige us to omit the items, and we only give the aggregate of the expenses, which, on the whole 100 acres, amounts to..... 454 80

Leaving a nett profit on the large farm of.....\$120 20

Statement of the produce and expenses of 20 acres of rich land :

Four acres of mowing, 5 tons to the acre, at 2 cuttings ;

20 tons of hay, worth to feed to stock 7 dols. per ton...\$140 00

Two acres of wheat, 30 bushels to the acre, 1 dol. $\frac{1}{2}$ bu. 60 00

One acre of corn, 90 bushels, at 50 cents $\frac{1}{2}$ bushel..... 45 00

Four loads of corn stalks, 3 dollars $\frac{1}{2}$ load..... 12 00

One acre of sugar beet, 800 bushels at 1s. $\frac{1}{2}$ bushel 134 00

One acre of potatoes, 400 bushels at 1s. $\frac{1}{2}$ bushel 67 00

Half an acre of ruta bagna, 450 bushels, at 12 $\frac{1}{2}$ cts. $\frac{1}{2}$ bus. 56 00

Half an acre of carrots, 440 bushels, at 1s. $\frac{1}{2}$ bushel..... 73 67

The mowing and cultivated crops take up 10 acres, leaving 10 acres for pasturage, which will keep, and keep well, 7 cows, a yoke of cattle, and a horse, 10 head, at 6 dols. each..... 60 00

Produce, worth to feed the stock 647 67

As before, Mr. Grant's estimate of the expenses is made for each crop, but we omit them, with the exception of the corn, which we give as a specimen, and to show that he has not omitted or underrated any important point.

Cost of cultivating an acre of corn :

Carting and spreading 30 buck loads of manure.....\$6 00

Ploughing turf once..... 2 00

Harrowing thoroughly..... 1 00

Planting 2 50

Hoeing three times..... 10 00

Gathering, husking and shelling..... 8 00

Labor in cultivating one acre of corn.....\$29 50

The aggregate of the expenses on the 20 acre farm, including labor, seed, repair of fences, &c. is..... 206 14

Nett profit on small farm.....\$41 53

To our western friends it may seem somewhat strange to see the product of 20 acres of grass put at 20 tons of hay, and that as well as the other crops on the 100 acres may appear to them underrated. To us, however, who remember the average crops of common farms in the New-England States, Mr. Grant will seem very near the mark, and his estimate of crops under the old system, a liberal one; and we have seen no estimate which places the results of good and bad farming, of applying capital to land, instead of drawing it away from it, in a more forcible, and as a whole, indisputable manner than Mr. Grant's. Those of our readers who have the Genesee Farmer, or the last volume of the Cultivator, will see that we have always been the strenuous advocates of small farms, not so much for the reason that it would keep our young men from going west, but because we believe it would add most essentially to the profits of agriculture. The most profitable part of every man's farm is his garden, and Mr. Grant's 20 acres is but a garden on a large scale. —Cultivator.

THE WHITE DAISY.—Under the title of Dictionary of Terms, &c. in the last October No. of the Cultivator, you denounce the white daisy as one of the greatest pests of the farmer, when permitted to get possession of the soil. I was once of your opinion and, therefore, spent many a weary hour in eradicating some scattering plants on my land. But experience, I think, has taught me better. I now consider the white daisy on my land a valuable grass. My mowing land, and most of my pastures, are a thin cold soil, not swampy; and the meadows, when well manured and in good condition, produce a good crop of excellent hay, principally timothy and clover. I give them a good top dressing of manure, if to be obtained, once in three years. When the meadows are in good condition, the daisies, where they have got strong hold, can hardly be perceived, but when the influence of the manure is much lessened, the daisies appear to be almost the only grass, and pro-

duce a middling crop in quantity, of the first quality of hay & cattle and sheep, if mowed while in the blow. I get no hay that consider as valuable for cattle and sheep as daisy hay, cut in bloom. It is true, it does not yield a great crop, for the reason that other grasses take its place when the land is in a condition to produce a great burden. But on my mowing land, I consider the crop worth more than I could get of any other grass, with the land in a like condition. I have, therefore, no longer any war with white daisies and the only weapon I ever use against them, is a good dressing of manure. I consider them equally good for pasture on the same kind of soil, but should be kept fed down, so as not to be too old.

Yellow daisies, or crow-foot. I have none on my land; but where I resided when young, they were plenty in low lands, and I thought farmers considered them, if cut in the blow, as good for cattle as sown clover the first year of mowing. I presume the same remedy, that is, a good manuring, will answer for them as well as the others.—Correspondent of Cultivator.

THE SUGAR BEET.

We make the following extracts from a communication by Mr. P. Diehl, of New Oxford, Pa., in reply to Mr. Guthrie's remarks on the Sugar Beet—

“In this neighbourhood persons, feeding the beet to their cows readily procure two cents more per pound for their butter than their neighbours, not using the beet, can for theirs. My Hogs wintered solely upon beets and kitchen slop, and I assure you, gentlemen, I have never yet heard them “squealing for more, although filled with them;” nor do I know of any one who has better conditioned hogs than myself. I have also fattened, solely on beets, Beeves which, when sold, were pronounced by the buyers to have been the best they had killed for five years preceding that time. I am at present feeding a lot of cattle with beets, which are absolutely in better condition than a lot purchased at the same time by a neighbour, and fed high upon corn. So much for feeding; let us now contract the probable amount of profit to the farmer, per acre, from a crop of beets, with that from a crop of corn. Allowing, then, the average crop of beets to the acre to be 1000 bushels, which is a moderate crop, it will be perceived that that quantity will fatten eleven head of steers in ninety days, at a bushel per day. And allowing the crop of corn to be 50 bushels per acre, which, in all conscience, is high enough, it will be found to fatten only one and a-half head in the same amount of time feeding at the usual rate of one and a-half pecks per day; leaving a balance in favor of beets, fractions aside, of about 800 per cent.” Cultivator.

This statement, though much nearer the truth than Mr. Guthrie's is not entirely accurate. Seven pounds of Indian Meal per day if well scalded is sufficient to fatten a cow of ordinary size, and any considerable increase would cloy and sicken the animal, but horned cattle are fed with cracked corn, not boiled, they can bear much larger quantity because the greater part will pass through their bodies undigested. We publish these contradictory statements to shew the utility of ascertaining by well conducted experiments the relative value of the different roots given to cattle. The Mangel Wurtzel, here, gives abundance of milk of a good quality and answers well for cows who cannot bear potatoes; it is, however, necessary to give a large quantity of this root. The Sweet Turnip produces fat rather than milk. Carrots are good for milk and fattening. If some of our farmers would make a fair trial of these different roots in feeding stock, both for the dairy and butcher, and send us the result for publication, they would confer a benefit on their brother agriculturists.

AGRICULTURAL IMPLEMENTS.

The want of convenient implements of husbandry is conspicuously apparent among the many deficiencies which characterize agricultural establishments of New Brunswick and Nova-Scotia and although our farmers complain incessantly of the shortness of the seasons, and of the insufficiency of labour performed, compared with the price which they give for it, still very few put such tools into the hands of their workmen. Some of our farmers entertain an hereditary attachment to the awkward implements wh-

generations have been handed down, unaltered, from father to son; whilst others, again, patronise the manufactory and importation of a few improvements in the shape of "Yankee notions," which might be made in our own Provinces, and for which large sums are annually remitted to the United States. The forks, rakes, axes-handles, &c. which are exhibited in piles at the doors of many shops in this City, are proofs of my assertion. It must be confessed, that too many of our farmers manifest but little observation, and still less enterprize. They pursue their *make do*, but *do not do well*, system, year after year. Although we fully appreciate the benefits which are derived from the improved breeds of cattle, and of choice seeds, still we are convinced, that agricultural societies would promote the object of their associations by more attention to the introduction and distribution of improved implements of husbandry, and to the encouragement of the manufacture of them in our own Province. At present it would seem as if the *ash* of our own country was unfit for the handle of a fork or an axe, and as if none but a "Down Easter" or New Yorker could give either of them the legitimate length and turn. Our farmers talk of the length of our winters, the shortness of the spring, the price of labour, the uncertainty of the crops, and many other drawbacks and difficulties, which receive additional influence from their own apathy; for notwithstanding the long winter evenings, it would appear that they do not furnish time and leisure for making many conveniences for farming purposes. When a farm is in that perfect state of snugness and arrangement, as respects stables, barns, barn yards, gates, fences, and such agricultural implements as an industrious farmer with common ingenuity might make, then, and not until there is an overplus of time with such a state of things, can it be said with truth that the hours of a long winter are profitless and unavailable. But it must be confessed, that the work of a long winter's evening, or a stormy winter's day, is too frequently postponed for the long days of a short spring, when we have often seen the farmer and his workmen repairing carts, ploughs, harrows, &c. &c.

When we compare the implements in use upon a farm in England with those upon a farm in New-Brunswick or Nova-Scotia, we must conclude either that time is more valuable in Great Britain, and that, therefore, the farmer uses every means to make the most profitable use of it, or that time in our Provinces is of no value, and that we do not require those implements which are found to husband it in other countries. But as the very opposite state is the truth of the case, the want of farming utensils is one among the many neglects which characterise our agriculture. We have often seen two men grinding a scythe, and not unfrequently the assistance of a boy required to pour water, whilst one man held the scythe and another turned the stone. Of course the parties must have a chat, and as talking and turning would be doing two things at a time, they must rest occasionally from their labour, that they might use the more restless member in their mouth with more comfort. Many an hour has been wasted in this manner, which could have been saved by a grindstone fitted with very simple machinery, to be turned by the foot like a turner's lathe, and to regulate through some water in a trough beneath it. With such an instrument, one man sharpens his own scythe or axe in a few minutes. We have seen a grindstone fitted in this manner, and the price cost of it, we believe, was but twenty shillings. Now, as time is money, and as hours make days, we would ask any farmer how many twenty shillings are consumed in a year with the grinding of scythes and axes, when an extra hand is required for the operation. Every farmer, therefore, should possess a grindstone upon rollers.

The revolving horse-rake "is found to be one of the most useful labour saving machines now in use. One man and horse, with a boy to lead, will rake on an average from 25 to 30 acres per day with ease, and do the work well."

The different agricultural societies would do well to unite a proportion of their funds for the importation of pattern implements of husbandry, such as improved ploughs, harrows, grubbers, scarifiers, sowers, horse-hoes, drills, drill-harrows, and drill rollers, furrow-press compressors, and any other implements calculated to expedite work upon improved and economical principles.

Much has been said against the capabilities of our Provinces agricultural countries, but little has been done to ascertain the power and extent of them. Work is performed under most disadvantageous circumstances, and still the returns from it are bountiful. The fertilizing influence of snow upon the soil, gives not

only a rapid but an abundant crop; and the present season, which commenced with such unpromising appearances, is a convincing proof of the capabilities of the Province, notwithstanding long winters, short springs, despair, and our defective systems of husbandry.—*New-Brunswick Agriculturist.*

There is too much truth in the preceding observations, and it is certainly high time that we should begin to manufacture many small articles that we purchase from our more industrious neighbours. We however see some good symptoms. The form of our Ploughs was, in many places, materially improved by the former Agricultural Society, and a number of useful implements have been imported within a few years, which it is to be hoped will be used as models, for we have many among us who can make them if they please.

COUGH OF SWINE.

This disease differs little from the Whooping Cough in the human species. There is the same distressing suffocation, and from the same cause. The tenacious pitch-like phlegm, (which in this disease as well as in the Whooping Cough, will readily draw into threads a yard long,) sticks the sides of the vesicles of the lungs so fast together, when brought in contact by the convulsive motion of coughing, that the action of breathing can hardly force them open. It differs, however, in one respect, for unless checked by medicine it never ceases till it has destroyed the animal, while the Whooping Cough always ceases after a certain period, and would rarely prove fatal were it not for the mischievous medicines that are given. This Cough is contagious, seizing all the pigs in the pen, and an instance has occurred in which the pigs were cured, fattened, and killed in November—the manure was all taken away, and the following spring several cartloads of green sods were thrown into the pen, and young pigs brought from another place put into it, who were within a fortnight attacked by the Cough. If a pig is killed after the barking or whooping has commenced, hundreds of small, thread-like worms will be found in the windpipe and the cavities of the lungs. The cure consists in destroying these worms, which is effected by giving the swine as much sulphur as they can bear without purging for two or three weeks. This remedy is equally efficacious in the disease usually called measles, which is caused by a smaller animalcule that may be found in the small knots or kernels in mealy pork. This animal (the *Cysticercus*) has sometimes been formed in the muscular system of man, and even in the human eye. The *Filaria bronchialis* which produces the Cough in swine, or a species like it, causes a fatal Cough in Cattle in Europe, for which no remedy appears to be known. It has also been found in the lungs of persons suffering with Consumption, and in the lungs of inferior animals which were affected with tubercles.

A Red Beet was raised this season in the garden of Mr. Robert L. Harris*, in Lower Horton, of the following extraordinary dimensions:—length, 14 inches; circumference, 26½ inches; weight of root and leaves, 22½ lbs; weight of root only, 16½ lbs.

* The gentlemen to whom we are indebted for the well-written essay upon the culture of Wheat in our last, where, by mistake "Chas K." Harris appears as the name of the author.

The Stock imported from England and the United States by the Central Board of Agriculture was sold at Studley on the 27th ult. The sale was very respectable attended by persons from different parts of the country, and we have much pleasure in stating that the competition, as proved by the prices at which the animals were sold, was such as to demonstrate that the spirit of improvement is awakened, that spirit which applied to the most useful of all arts, cannot fail to do good.

The Ploughing Match on the preceding day was contested by twelve ploughs, and it is but justice to say, that the worst ploughed ridge would generally have been accounted very good workmanship in the country. Indeed had the ground been equally dry, and free from stones, there is reason to believe that the Umpires would have had a difficult task to decide which of seven or eight ploughmen was entitled to the first prize.

That the Central Board have exerted themselves zealously since their formation every one must be sensible who has witnessed their proceedings, but it seems to be the opinion of some countrymen that those Members who reside in Halifax have no practical knowledge of farming. This is not the case. It would have been very difficult the past season to have found in the most fertile parts of the Province, crops exceeding those of Mr. Fairbanks' farm in Dartmouth, a considerable part of which was common spruce swamps, which he has drained and brought into a high state of cultivation without the ruinous practice of burning the turf. Studley, the seat of Mr. Richardson, is well remembered to have been a slate barren, overgrown with black Huckleberry, interspersed with clumps of stunted pine, spruce, and haemetac; but a wonderful change has come over it under his management; it now produces good crops of wheat, oats, potatoes and grass. Other Members are engaged, more or less, in agricultural pursuits. They have therefore the stimulus of cultivating a favorite art superadded to the desire of increasing the prosperity of a Province with which their own is connected.

If our farmers, by introducing superior stock, better implements and additional information, could increase their profits 5 or 6 per cent the aggregate amount would be considerable, for the farmers are many. Let them therefore apply well-directed labour and abundant manure to their soil, and they may rest assured of their remuneration from a most honest paymaster, never yet found unable or unwilling to pay its debts.

The Canadian Stallion lately imported from, and named *Montreal*. This beautiful animal is about 14½ hands high, 5 years old, of a dark brown color, and cost £75, to which the expence of importation is to be added, being about £15.—Bought by the Pictou Society, for £50.

Young Favourite, a light brown roaned Bull, short-horned Durham breed, calved May 8, 1840—got by *Driver*, dam by a son of *Young Eryholme*; quarter dam by *Waterloo*, cost in London 40 guineas, on which an advance of 4 guineas was offered to the Agent of the Board for re-purchase.—Bought by the Cornwallis Society, for £54.

A pure Durham Bull, 10 months old, color roan, got by *Musician*, dam by *Emperor*. *Musician* was bred by Lord Spencer, and sold as a calf at 50 guineas—cost 35 guineas in Essex—Bought by the Digby Society, for £51.

A pure Hereford Bull, calved January, 1841, color grey, got by Mr. Sinythie's bull, whose dam won the prize at the meeting of the Hereford Royal Agricultural Society, held at Oxford, 1839—dam, Mr. Reynolds' *Blowdy*, gr. dam, *Old Blowdy*, sold for 240 guineas; cost 20 guineas at Lynch Court, near Hereford—Bought by the East Hants Society, for £16.

A 2 year's old Durham Heifer (in calf by *Musician*) by Mr. Hobbs' Durham bull *Victory*, which gained the first prize at five exhibitions. *Victory* was bred by Lord Huntingfield; cost 25 guineas in Essex.—Bought by the Halifax Society, for £27.

A pure 2 year old Hereford Heifer, bought of Lord Huntingfield, in calf by Mr. Price's young bull, which Mr. Hobbs hired at 30 guineas the season for 18 cows. Mr. Price is considered the best Hereford breeder in England.—Bought by Mr. Rhand, £10.

CHEVIOT RAMS.

- 1 Ram, £7 0—Bought by the Arichat Society.
1 Ram, 11 10 “ Mr. Bu-kirk.
1 Ram, 12 10 “ the Digby Society.
A sick Ram, 15s. “ Mr. Sherlock.

NEW LEICESTER EWES.

- 1 Ewe, £7 15—Bought by the Mahone Bay Society.
1 Ewe, 7 10 “ Digby Society.
1 Ewe, 7 10 “ Arichat Society.

SOUTH DOWN EWES.

- 1 Ewe, £7 15—Bought by the Mahone Bay Society.
1 Ewe, 7 15 “ Digby Society.
1 Ewe, 7 10 “ Arichat Society.

PINNEYS FIGS.

- 1 pair, £8 5—Bought by the Mahone Bay Society.
1 pair, 7 10 “ Arichat Society.
1 pair, 8 10 “ Mr. Archibald M'ulloch.
1 pair, 8 5 “ Mr. George Preston.
1 pair, 8 0 “ Brookfield Society.
1 pair, 8 0 “ Inverness County Society.

IMPROVED ESSEX FIGS.

- 1 Boar, £5 0—Bought by Mr. E. Starr.
1 pair, 10 0 “ the Cape Breton County Society.
1 pair, 9 10 “ Arichat Society.

SUFFOLK BOARS.

- 1 Boar, £4 15—Bought by the Mahone Bay Society.
1 Boar, 4 5 “ Inverness County Society.

BERKSHIRE FIGS.

- 1 pair, £9—Bought by Mr. Mott.
1 pair, 8 “ the Inverness County Society.

DARTMOUTH AGRICULTURAL SOCIETY.

A subscription having been entered into by a number of individuals for the purpose of forming an Agricultural Society in Dartmouth, a public meeting was accordingly held for the purpose at the Schoolhouse on Saturday the 16th Oct. at 2 o'clock.

The meeting which was very respectably attended was opened by calling to the chair John E. Fairbanks, Esq., who briefly explained the objects of the meeting.

The names of the Subscribers were then read, amounting to 100 in number; and an expectation was expressed that the Society would be supported by at least an equal number who had not yet been applied to.

Mr. A. James having been appointed Secretary for the purpose of the meeting, the following Resolutions were then passed unanimously:

1st—Resolved, That this Society be called the *Dartmouth Agricultural Society*, and that the Officers of the Society be, a President, two Vice-Presidents, two Secretaries, a Treasurer, and a Committee of nine persons to be appointed annually, five of whom to be quorum.

2d—Resolved, That there be Two Meetings of this Society each year, one in March and one in November, the dates to be fixed by the Committee.

3d—Resolved, That the subscription to this Society be five shillings annually.

The following officers were then chosen—John E. Fairbanks Esq. *President*; Messrs. Henry Y. Mott, and Alexander Farquharson, *Vice-Presidents*, Mr. Alexander James, *Secretary*, John Tempest, Esq. *Secretary and Treasurer*; *Committee*—Messrs. John Farquharson, Andrew Shields, James Lawlor, John Craig, Hood Clifford, Philip Brown, George Tulloch, Hector Elliot, and John Robinson.

The following Resolution was then passed—Resolved, That the President, Vice-President, and Secretaries, be a Committee to frame Rules for this Society, and submit the same to the next General Meeting.

After which, a Vote of Thanks was passed to the President for his able conduct in the chair, and the meeting then separated.

A. JAMES, Secretary.

Dartmouth, October 16th, 1841.

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